

Abstract

At the Crossroads:
Maritime Systems in Transition and the
Elizabeth City Ships' Graveyard, North Carolina

By Lindsay S. Smith

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Director: Nathan Richards

Department of History

The Elizabeth City Ships' Graveyard in the Pasquotank River represents the largest assemblage of deliberately discarded watercraft found in North Carolina to date. Applying Annales School principles to the abandonment complex surrounding Elizabeth City, this research aims to illuminate the city's historic maritime interaction on Braudel's three levels of history, the *longue durée*, *conjunctures*, and *l'histoire événementielle*. Grounded in a behavioral/psychological theoretical framework, this research will also provide an analysis of the abandonment complex's site formation and abandonment processes. This thesis will attempt to assess the potential of a combined Behavioral-Annales theoretical approach for supplementing Elizabeth City's established maritime history, expanding archaeologists' knowledge on abandonment patterns seen throughout North Carolina, and contributing to existing worldwide archaeological research on abandoned vessels.

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At the Crossroads:
Maritime Systems in Transition and the
Elizabeth City Ships' Graveyard, North Carolina

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Lindsay S. Smith

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At the Crossroads:
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by

Lindsay S. Smith

APPROVED BY:

DIRECTOR OF THESIS: _____
Nathan Richards, PhD

COMMITTEE MEMBER: _____
Wade Dudley, PhD

COMMITTEE MEMBER: _____
Bradley Rodgers, PhD

COMMITTEE MEMBER: _____
Mark Staniforth, PhD

CHAIR OF THE DEPARTMENT OF HISTORY:

Gerald Prokopowicz, PhD

DEAN OF THE GRADUATE SCHOOL:

Paul J. Gemperline, PhD

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CHAPTER ONE: INTRODUCTION

Introduction

Elizabeth City is located along the Pasquotank River in the Albemarle District of northeastern North Carolina. The Albemarle District defines the area of North Carolina from the North Carolina-Virginia border south to the Albemarle Sound and stretches from the east bank of the Chowan River to the Outer Banks (Figure 1.1). Within this geographical area, four major rivers, the Pasquotank, Perquimans, Chowan, and Roanoke, as well as numerous smaller rivers and streams drain into the Albemarle Sound. The Pasquotank River originates in Lake Drummond in Virginia's Dismal Swamp and terminates in the Albemarle Sound approximately 55 miles to the southeast. Once in North Carolina, the river runs along the border between Pasquotank and Camden Counties.

The town of Elizabeth City is situated sixteen miles northwest from the Albemarle Sound at a turn in the Pasquotank River called "the Narrows" (Pugh 1957:7). Inlets in the Outer Banks that lead to the Albemarle Sound provide a deepwater approach up the Pasquotank River to Elizabeth City. The abandonment complex populating the waters that surround the city is a physical manifestation of the maritime industry, economy, and trade that was integral to Elizabeth City's early development. The area of investigation includes the east and west banks of the Pasquotank River and extends 1.5 miles north and 1.0 mile south of the U.S. 158 bridge connecting Elizabeth City to Machelhe Island (Figure 1.1).

Elizabeth City is situated mid-way along the Atlantic coast between three historically significant ports. Elizabeth City lies 172 miles northeast of Wilmington, North Carolina, 320 miles northeast of Charleston, South Carolina, and 38 miles south of Norfolk, Virginia. These ports were integral to the regional trade network in which Elizabeth City participated.

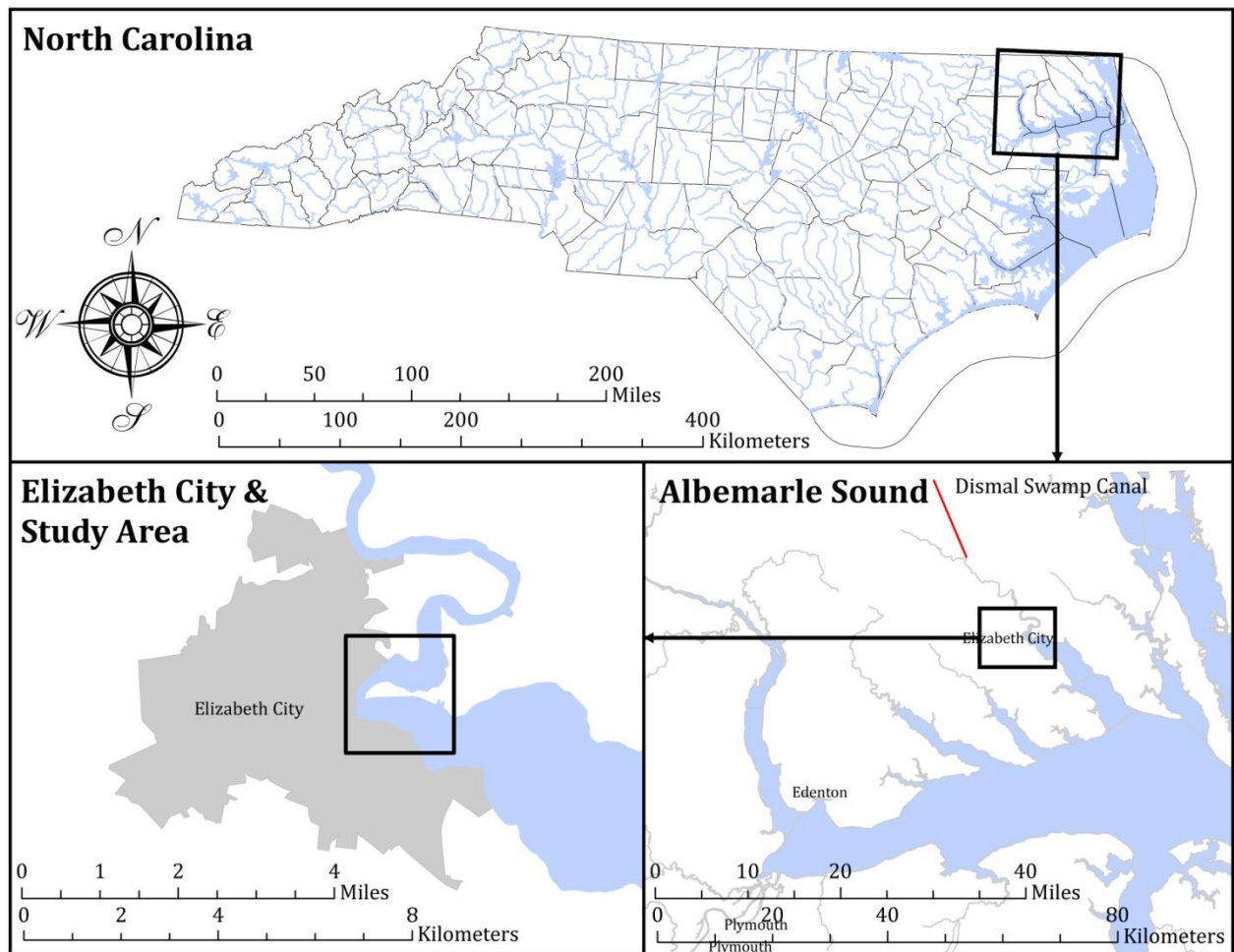


FIGURE 1.1. North Carolina featuring the Albemarle Sound and the area of this research at Elizabeth City in the Pasquotank River (Map by author 2010).

Elizabeth City, from its incorporation in 1793 through the dawn of the 20th century, was a growing metropolis in northeastern North Carolina. Historical research has demonstrated that the area that would become Elizabeth City was settled due to its access to navigable waterways for trade, transportation, and sustenance. A prime location, with access to two main transportation waterways, the Albemarle Sound and Dismal Swamp Canal via the Pasquotank River, dictated Elizabeth City's development of a rich maritime heritage that has persisted throughout its over 200 year history.

Participation in North Carolina's largest industry, naval stores, became the driving force for Elizabeth City's development. With the completion of the Dismal Swamp Canal in 1805,

Elizabeth City was able to overcome all the largest hurdles hindering coastal North Carolina towns; lack of deep-water ports, shifting sandbars that rearrange coastal inlets after heavy storms, and the treacherous Outer Banks. Completion of the canal not only opened up an intracoastal waterway for trade between Virginia and North Carolina and beyond, it also provided access to the natural resources long hidden in the swamp's depths. Bald Cypress, Black Gum, Juniper, and Pine trees were now available for harvesting for the naval stores industry that went beyond milled lumber to include shingles, turpentine, resin, pitch, and tar (Federal Writers Project 1978:89-91).

Continual canal improvements by the U.S. Army Corps of Engineers, including channel widening, lock maintenance, and dredging to deepen the depth, incrementally allowed larger and more technically advanced vessels to utilize the inland connection to the north (*New York Times* 1847; Brown 1971:57). Budding industries such as lumber, naval stores, cotton, corn, fishing, and tobacco were able to expand and profit from the increased navigability of the canal throughout the first half of the 19th century (C.E. Weaver Series 1915:1-22). This maritime prosperity was short lived however, as the arrival of railroads, the newly opened Albemarle & Chesapeake Canal, and onset of the American Civil War altered and interrupted industrial growth throughout the second half of the 19th century.

The dawn of the 20th century saw a revival in Elizabeth City's maritime activity as the Dismal Swamp Canal reopened with dramatic improvements (Brown 1970:154-155). Regional, national, and international circumstances exhibited their influence on Elizabeth City's maritime economy throughout World War I, The Great Depression, and World War II, and by the middle of the 20th century any remaining maritime activity shifted away from life-supporting industry to recreational activity.

While Elizabeth City has enjoyed prosperous maritime-based industries at various times during its history, it is important to discover why the city did not continue its maritime growth and become a major port in northeastern North Carolina. History has documented this maritime culture for posterity (Brown 1970; Griffin 1970; Meekins 2007), however, the cultural landscape surrounding the city remains an untapped resource to supplement this record. The physical imprint left behind by local maritime industry consists of decrepit wharves and docks, rusting marine railways that disappear into the murky depths of the Pasquotank, and abandoned ships that litter the banks of the river above and below Elizabeth City. These relics of a time gone by evoke memories of the once thriving maritime culture that built and sustained Elizabeth City.

One of the main vestiges of the city's economic development is a complex of 84 abandoned ships known as the Elizabeth City Ships' Graveyard. The discovery of this complex presents an opportunity to apply Annales School principles to the archaeological investigation of a ships' graveyard site using Elizabeth City as the case study. The Annales School is a style of historiography that provides an alternative to traditional historical theory models. Specifically applicable to this investigation is Fernand Braudel, a second-generation Annales scholar, who presents a three-tiered model of temporal rhythm (Knapp 1992:6; see also Braudel 1972).

Archaeologists have been slow to adapt Annales School. Barbara Little and Paul Shackel (1989:495) are among the few terrestrial archaeologists to utilize an Annales-informed approach to analyze archaeological terrestrial sites and Delgado (2008) and Staniforth (1997, 2003) are, thus far, the only maritime archaeologists to integrate Annales School theoretical principles into their published research. The majority of maritime archaeology investigations deal with perceived single events (mainly shipwrecks) but have the potential to be investigated on all three

levels of an Annales-influenced historical analysis. This thesis intends to assess the applicability of Annales-principles to archaeological investigations of ships' graveyard sites.

Abandoned vessels litter both shores of the Pasquotank River above and below Elizabeth City. Some sites are associated with historic maritime industrial locations, while others reside in clusters in less conspicuous areas of the river. While these abandoned vessels may be considered a nuisance to some, much as residents of Wilmington, North Carolina have historically viewed the Eagles Island Ships' Graveyard as "not an attractive addition to the scenery of our port...[and] an eyesore" (Seeb 2007:208), they are an untapped resource for archaeologists studying past cultures. Discarded maritime material culture provides insight into past societies' interaction with the maritime environment that may either support or redefine the established history.

Archaeological studies of ships' graveyards, newly prominent in the maritime archaeology field, endeavor to answer questions regarding human behavior and interaction with the maritime environment. Researchers (Schiffer 1995; Staniforth 1997, 2003; Richards 2002, 2008; Richards and Staniforth 2006; Seeb 2007) have previously combined archaeological, anthropological, and behavioral/psychological approaches in their research. These combined approaches attempt to decipher the motivations behind human decision-making based on patterns and behaviors observed in the archaeological context. This behavioral/psychological theoretical approach, discussed more fully in Chapter Two, has been utilized on multiple abandonment studies both within North Carolina and around the world. The successful application of this theoretical framework on these other ships' graveyard studies can be utilized as comparative sources for the Elizabeth City abandonment complex analysis. Correlative research on

abandonment sites also provided means for comparing the Elizabeth City Ships' Graveyard to the larger context of local, coastal, and regional trade.

The Program in Maritime Studies at East Carolina University (ECUPMS) has completed a variety of different projects within North Carolina that are comparable to this investigation. Sami Seeb's investigation, *Cape Fear's Forgotten Fleet: The Eagle Island Ships' Graveyard, Wilmington, North Carolina* (2007), provides a similar study for comparison among urban abandonment graveyard sites. Additional projects include the *Cypress Landing of Chocowinity Bay* (Merriman 1997), *Castle Island Ships' Graveyard* (Rodgers et al. 2006) and a current investigation into an abandonment complex at Wright's Creek (Marcotte 2008). The Castle Island investigation discusses eleven abandoned vessels on the Tar River and the Cypress Landing study reports the use of an abandoned North Carolina scow schooner as a breakwater, as well as mentioning the use of similar vessels in Elizabeth City.

ECUPMS investigations into abandonment complexes are not solely restricted to North Carolina. Dr. Bradley Rodgers led multiple projects on the Great Lakes investigating various vessels utilized as cribbing for quays, which is a form of intentional abandonment (Rodgers and Green 1999; Rodgers et al. 2006). ECUPMS's past two field seasons, during the summer and fall of 2008, have been a continuation of The Abandoned Ships' Project. Dr. Rodgers headed the investigation into two ferrous hulks in Black Bay, Bermuda in July 2008, and Dr. Nathan Richards' September 2008 investigation focused on abandoned watercraft in Convict Bay, Mullet Bay, and Grotto Bay, in Bermuda.

Dr. Richards has been intricately involved with The Abandoned Ships' Project since its 1997 inception by Flinders University in South Australia. The project has increased the number of abandonment sites investigated and the resulting publications have dramatically advanced

archaeologists' understanding of abandonment behavior and graveyard sites (Richards 2002, 2008; Richards and Staniforth 2006). Richards' (2008:7-10) abandonment classification system as catastrophic, consequential, or deliberate abandonment will be applied to this investigation to determine the applicability of these terms across culture and site location.

Donald Shomette's investigation of the abandoned watercraft located at Mallows Bay on the Potomac River in Maryland is another important source for analysis (Shomette 1996). Mallows Bay represents one of the largest collections of abandoned vessels in America. Though the causes and circumstances of the Mallows Bay complex differ greatly from Elizabeth City's, Shomette introduced new information regarding abandonment behavior and patterning in his investigations that is applicable to this thesis. These previous abandonment studies provide important comparative sources for this research.

The ships' graveyard lying in the Pasquotank River exemplifies a number of behaviors related to watercraft disposal allowing additional evaluation of the complex through analysis of site formation process. Accidental loss is represented minimally in this abandonment study. Few of the vessels investigated display characteristics that indicate they were true shipwrecks or accidental losses, such as sinking due to damage while at anchor and never being salvaged by owners. The overwhelming majority of the vessels exhibit previously documented characteristics indicating intentional abandonment. These abandonment signatures signify deliberate loss as the conclusion to a rational thought process. Whether intentionally or accidentally abandoned, vessels also demonstrate reuse and salvage behaviors. Analyzing the circumstances surrounding the creation of this abandonment assemblage through a behavioral/psychological approach provides insight into Elizabeth City's decline in maritime prominence. Utilizing behavior

archaeological principles also illuminate historic trends in technology, changes in the economic environment, prevailing social behaviors, and shifts in waterborne activities.

Investigating ships' graveyards through Annales School principles will build upon these previous behavioral/psychological approaches and attempt to demonstrate the significance of abandoned vessels beyond the *l'histoire événementielle* and in the bigger context of the *longue durée*, and *conjonctures*. Using the example of the Elizabeth City Ships' Graveyard, an analysis on the three levels of history proposed by second-generation Annalist Fernand Braudel will further clarify Elizabeth City's maritime tradition and participation in the eastern seaboard's complex trading networks throughout history.

Research Questions

The primary research of this thesis poses questions concerning what information an archaeological and historical analysis of the Elizabeth City Ships' Graveyard (according to Annales School sensibilities) will reveal about Elizabeth City's maritime heritage. This thesis will place the vessels in temporal context within the historical conditions that led to the abandonment events (*l'histoire événementielle*), the prevailing social, economic, and technological atmosphere of the vessels' use life and conditions leading up to abandonment (*conjonctures*), as well as their place in the associated society's complete history (*longue durée*).

Within this thesis, secondary questions will be posed to determine site formation processes and investigate abandonment behavior to illuminate human interaction with the maritime environment. Analysis will determine the compatibility of combining a behavioral approach with Annales School principles on Braudel's three levels of history, and if possible, integrate that data with the *long durée*, *conjoncture*, and *l'histoire événementielle*. It will be important to determine whether a single historic event created the ships' graveyard or if the area

was utilized for vessel discard repeatedly and during different historic phases. Determining the temporal period in which the abandonments occurred is another avenue of inquiry. Determining whether the vessels were abandoned in response to an economic event, technological advancement, shift in the societal beliefs, change in value or reliance on the maritime environment, or some combination thereof is also important as each criterion provides different insight into the rationale behind the abandonment decision process.

Vessel typology will also be analyzed to determine if there is a relationship between vessel type and function with abandonment circumstances. Determining construction location, the size of the shipbuilding operation, ownership, and the industry in which vessels operated may provide information pertaining to understanding abandonment behavior. Ultimately, this thesis will determine if an archaeological investigation based in the Annales School will discover information that can supplement or redefine accepted conventions concerning Elizabeth City's maritime participation on local, regional, and national levels throughout history.

Research Design

The Elizabeth City Ships' Graveyard represents a microcosm of changes in the city's historic economy, culture, and technology. Analysis of the abandonment complex according to Annales School sensibilities questions Elizabeth City's established maritime heritage and is the cornerstone of this research. Utilizing behavioral theory to identify and understand the behaviors reflected in the material remains is also integral to the analysis of the Elizabeth City Ships' Graveyard. Chapter Two, theory, identifies the central principles of Annales School approaches to historiography. It outlines the school's conception by French historians, interdisciplinary utilization, terrestrial archaeologists' initial adaptation of the theory, and the more recent applications in the sub-discipline of maritime archaeology. Chapter Two also outlines site

formation processes and abandonment related behaviors previously documented and thoroughly studied by Michael Schiffer, as well as Reid, Staniforth, and Richards (Schiffer 1987, 1995; Schiffer and Skibbo 2008; Reid et al. 1976; Staniforth 1997, 2003; Richards and Staniforth 2006; Richards 2002, 2008). Finally, Chapter Two will outline past archaeological applications of these two theories and lay the framework for their application to this research.

Chapter Three details the methodology used on the project. Methodology falls into three sections. The first section outlines the historical research conducted and the different repositories searched. The second section describes the methods used during archaeological fieldwork in the Pasquotank River. The final section details the compilation and analysis methods used to understand the data collected during historical and archaeological research and fieldwork.

Chapter Four provides a synthesis of the archaeological and historical data obtained for each vessel in the abandonment complex. The summaries include current archaeological data, information obtained from previous archaeological investigations, and historical information gathered from various sources. Individual chronologies are outlined to document vessels' life-cycles from construction to abandonment to present status. Vessel histories differ depending on the amount of information available. Abandonment signatures identified during archaeological fieldwork are analyzed through the application of the site formation and behavioral theory from Chapter Two. Site formation processes such as use, modification, and deposition characteristics as well as any additive or reductive processes are related in this chapter with the intent of placing the abandonment *événementielle* within the context of Elizabeth City's maritime history in later chapters.

Elizabeth City's history will be presented in three acts according to second-generation Annales scholar Braudel's hierarchy of *longue durée*, *conjunctures*, and *l'histoire*

événementielle. Act One, Chapter Five, relates the history of the area on the largest scale, the *longue durée*. This time period covers approximately three hundred years of human occupation from prehistoric inhabitants through the present. It is important to recount the history of the area that would eventually become Elizabeth City to understand fully the impact geology and geography had on the city's establishment and overall development. Human interaction with the maritime environment is a primary focus of this chapter.

Act Two: The Main *Conjoncture* is explored in Chapter Six. *Conjonctures* are short periods within the *longue durée* that directly relate to Elizabeth City's economic development and waterborne activities. In the case of Elizabeth City, *conjonctures* represent cycles of economic expansion, sustained prosperity, and economic decline that repeat for approximately seven decades. The cycle that directly corresponds with the creation of the ships' graveyard begins after Civil War Reconstruction in 1881 and continues through the middle of the 20th century.

Act Three addresses the smallest level of history, *l'histoire événementielle*, which in this case study refer to abandonment events and the immediate circumstances that influenced them. Chapter Seven analyzes the results of the correlated historical and archaeological research in Chapters Four and Six for any behavioral or depositional patterns that may describe the step by step creation of the ships' graveyard. The graveyard vessels will also be evaluated to determine the economic, cultural, and technological circumstances that influence their abandonment in Chapter Seven.

The conclusion in Chapter Eight represents The Finale of Elizabeth City Ships' Graveyard analysis. It determines the effectiveness of applying Annales-based principles to the maritime archaeology site, the Elizabeth City Ships' Graveyard, as well as the compatibility of

utilizing a combined behavioral and Annales-based theoretical framework. This study is placed within the context of local, regional, and worldwide vessel abandonment scholarship in Chapter Eight as well as suggestions for further research and the limitations of this investigation.

Conclusion

This thesis will examine an underutilized aspect of maritime archaeology only recently explored for its ability to add considerable value to the discipline. This research will supplement Elizabeth City's documented maritime history, expand archaeologists' knowledge on abandonment patterns seen throughout North Carolina, and contribute to existing worldwide archaeological research on abandoned vessels. The abandoned vessels surrounding Elizabeth City also represent an opportunity to test the applicability of an Annales-based approach to analyzing ships' graveyards in conjunction with behavioral/psychological principles. The following chapter explores the theoretical basis of this investigation and demonstrates its relevance to abandonment watercraft research.

CHAPTER TWO: THEORY

Introduction

Archaeological studies of ships' graveyards, newly prominent in the maritime archaeology field, endeavor to answer questions regarding human behavior and interaction with the maritime environment. Researchers have previously combined archaeological, anthropological, and behavioral/psychological approaches in their theoretical analysis of vessel abandonment sites. Archaeologists studying ship abandonments have stressed the importance of process and underlying abandonment behavior over face-value description and analysis, but have failed to take the next step and put those processes into societal context at the time of the event, in the overlying trend, and within the overall history (see for instance Schiffer 1987, 1995; Richards 2002, 2008; Richards and Staniforth 2006; Skibo and Schiffer 2008). Investigating the Elizabeth City Ships' Graveyards through Annales School principles will build upon these previous approaches and will demonstrate the significance of abandoned vessels in the context of Fernand Braudel's three tiered hierarchy of temporal rhythms; the *longue durée*, *conjunctures*, and *l'histoire événementielle*.

This thesis will attempt to assess the potential of Annales-informed approaches for supplementing the established history of ships' graveyards and the associated cultures that create them. Using the example of the Elizabeth City Ships' Graveyard, an analysis using Annales-based principles will illuminate the city's historic maritime interaction and participation in local, regional, and national trade, expand archaeologists' knowledge on abandonment patterns seen throughout North Carolina, and contribute to existing worldwide archaeological research on abandoned vessels.

This first half of this chapter explores the foundation of the Annales School in 1920s and its development throughout the majority of the 20th century. The four generations of Annales-based theory and the associated scholars are discussed with particular emphasis on Fernand Braudel's three-tiered model of temporal rhythms, as it is directly applicable to the Elizabeth City Ships' Graveyard. Previous application of the Annales School principles on various terrestrial and maritime archaeological investigations will also be discussed in this section

The second half of this chapter will outline behavioral/psychological theories, focusing on site formation and abandonment processes. Identifying and understanding the cultural and noncultural transformation processes that influence abandoned sites are discussed as well as the processes involved in the transformation of an artifact from the systemic context to the archaeological context. This section also introduces Schiffer's four stage artifact life-cycle and recent adaptations of that model for maritime archaeology.

Annales School History

Written histories through the 19th century were limited in originality and subject. They were primarily dedicated to the "rational, sovereign, fully political male...written in terms of domestic and international affairs of empires, nation states, and churches" (Clark 1999:x). Resistance to this prominent tradition began during the French Enlightenment with proponents such as Voltaire and Montesquieu, while intense opposition was not widely heard until the early 20th century appearance of the British Marxists (Hobsbawm 1959, 1962; Thompson 1963; Kaye 1984) and American Cliometricians (Conrad and Meyer 1958; Fogel 1964; Fogel and Engerman 1995). The 20th, and now 21st centuries have seen this traditional approach to historical documentation change significantly to the point where history now adheres itself to no single theory and has shifted its ideals to believe that all stories should be heard, not just the

outstanding individuals or overtly significant events. No one individual or group of scholars has influenced this shift more so than the historians of the Annales School have (Clark 1999:x-xi,238-239).

Annales School methodological foundations and principles are most easily seen in its first three generations. The first generation of Annalists was comprised of two French historians and professors at the University of Strasberg, Marc Bloch (1878-1956) and Lucien Febvre (1886-1944). Bloch, a medievalist, and Febvre, an early modernist, founded the journal *Annales d'histoire économique et sociale* in 1929. Since its inception, the journal has undergone numerous name changes, the most recent of which occurred in 1994 when the journal became *Annales: Histoire, sciences sociales* (Knapp 1992:5; Clark 1999:xi-xii).

Bloch and Febvre rallied against archaic university principles and challenged traditional conceptions of how to study history. Drawing inspiration from their mentor, Febvre's teacher Gabriel Monod, Bloch and Febvre established their methodological framework from the work of Jules Michelet, F. Simiand, and Henri Berr (Knapp 1992:5). They incorporated Michelet's emphasis on ordinary people, daily life, and use of a broad range of sources to create a total history. From Simiand they acquired beliefs of an interdisciplinary approach to history that included economics, sociology, psychology, anthropology, and geography. Bloch and Febvre admired Herr's attempts to recombine all sub-disciplines of history creating a single body that included the histories of art, philosophy, politics, economy, and science (Knapp 1992:5; see also Simiand 1903 reprinted in *Annales ESC* 15[1960] 83-119; Braudel 1973; Foster 1978; Burrows 1982).

Above all other goals, Bloch and Febvre aspired to create an atmosphere of interdisciplinary scholarship within which first generation Annales scholars would be able to

utilize a total approach to historiography. Secondary to this, they wanted to develop a methodology that would synthesize and relate “all of the mental, physical, and material forces that shaped past human experience” from within the diverse database created by the various disciplines (Knapp 1992:5).

Fernand Braudel (1902-1985), Febvre’s student and successor as editor of *Annales*, dominated the second generation of *Annales* scholars (1950-1970). Braudel asserted that “macrophenomena were determinate and microphenomena indeterminate” (Knapp 1992:6; see also Lucas 1985). Braudel believed that only with diverse and comprehensive analysis would historic events attain significance. Braudel created a three-tiered model of hierarchical temporal rhythms consisting of the *longue durée*, *conjonctures*, and *l’histoire événementielle* to obtain this in-depth examination, an approach he applied in his thesis, *The Mediterranean* (1972).

The *longue durée* examines elements of the macrohistory, long-term social and environmental factors that influence human behavior. *Conjonctures*, the medium level of history, are short cycles of history ranging from five or ten years to fifty years long documenting divergence from normative behaviors. Technological change and economic elements such as wages and prices are seen as indicators of change. These recurring aspects of a culture can be assessed when events disturb the established order of society. *L’histoire événementielle* are occurrences on the micro level of history. This was Braudel’s small concession to traditional narrative history to which he gave the least amount of attention of the three levels of analysis (Knapp 1992:6; see also Bintliff 1991; Clark 1999; Burguiere 2009).

The *Annales* School's third generation (1970-1980) was comprised of many scholars across a number of disciplines. The perceived scattering of third generation scholars’ topics was a great departure from Braudel’s all encompassing worldviews, but was believed to be more in

the spirit of founders Febvre and Bloch's goal of interdisciplinary collaboration. Third generation scholars tackled the founders' goal of total history in a metaphorical sense with their geographically and temporally diverse areas of study. As Knapp (1992:5-7) notes, research areas ranged from prehistory (Bottero et al. 1973; Demoule 1982) to classical antiquity (Austin and Vidal-Naquet 1977; Vernant and Vidal-Naquet 1981), and spanned geographic areas such as post-medieval through post-revolutionary France (e.g., Forster and Danum 1977; Le Roy Ladurie 1979; 1981), to contemporary America, Israel, and Russia (Ferro 1980; Furet 1984:156-206; Berelowitch et al. 1985).

The Annales School has had, and in its fourth generation continues to exert, a measurable impact over its more than eighty years of existence. This influence is seen not only in the number of historians that have utilized its various principles, but is further substantiated by various publications in alternate disciplines such as philosophy, economics, sociology, anthropology and archaeology (Tackett 2009:ix). Annales' longevity is not an indicator of its acceptance though, and the movement is not without opposition.

Opponents cite Annalists' seemingly counterintuitive positions when criticizing the school. Supporters often maintain that with *Annales'* continual evolution the movement is remaining faithful to founders Bloch and Febvre's original ideals. Opponents argue that repeated reference to tenets set forth by the first generation hinder the founding ideals that called for continual adaptation and re-evaluation in search of total history (Bintliff 1991:1-2; Revel 1992:75-76; Burguiere 2009:1-2). Contrary to appearances, the Annales School is perpetuated forward by these roots rather than stunted by them. Remembering the founder's aspirations for total history through open-minded interdisciplinary research, the movement has succeeded, thus

far, in adapting new methodology and theory while continually reassessing old principles for relevance.

Jacques Revel, a late 20th century Annales historian, takes issue with the Annales School label. The “Annales School” not only refers to the journal, its contributors, and historians mentioned herein, but also “embraces many other French scholars and the historical essays, monographs, multivolumed works and collaborative projects that were the products of their research” (Clark 1992:xii). Revel argues that the term “School” denotes a false sense of unity of thought and obscures the variety found in the Annales-influenced works over the past eight decades. Some Annalists, such as Emmanuel Le Roy Ladurie and Pierre Chaunu utilize the term ‘Annales School’ without qualm, while Revel prefers to refer to it as a ‘voice’ or ‘series of voices within an ongoing discussion,’ and yet others believe ‘movement’ or ‘mode of thought’ are more appropriate for categorization (Clark 1992:xii). As there is no cohesive terminology, for the purposes of this thesis the term Annales School will be used in the broadest sense to represent a group of likeminded scholars that consider themselves affiliated with any of the diverse Annales principles.

Annales and Archaeology

Despite being conducive to an interdisciplinary approach to historical analysis, archaeologists have been slow to adapt Annales School. Previous arguments (Jones 1991) claimed that archaeology focuses mainly on the *longue durée*, or complete history, and that archaeological evidence and material culture are ill suited to reconstruct history on the two smaller scales, *conjonctures* and *l’histoire événementielle*. Historical archaeologists Barbara Little and Paul Shackel (1989:495) utilized an Annales approach in analyzing domestic possessions in 18th century Maryland refuting Jones’ claims.

John Bintliff, editor of *The Annales School and Archaeology* (1991), also outlines the Annales-archaeology relationship and applies an Annales-based approach to a case study from Central Greece, the Boeotia Project, underway for the past decade with Anthony Snodgrass (Bintliff 1991:1-33; see also Bintliff and Snodgrass 1985, 1988). More recently, A. Bernard Knapp (1992) tackled Annales' place in archaeology in *Archaeology, Annales, and Ethnohistory*, a collection of articles from top scholars in the field, and K.R. Dark (1995) addressed Braudel's Annales-based theory in his book *Theoretical Archaeology* (Knapp 1992; Dark 1995).

Annales-based approaches have recently been used in maritime archaeology. A majority of maritime archaeology investigations deal with a perceived single event, mainly shipwrecks, or in this case vessel abandonments, and have potential to be investigated on all three levels of Braudel's model of temporal rhythms, an Annales-influenced method of historical analysis. Notably, Staniforth (1997, 2003) and Delgado (2008) have also rebutted Jones' claims by demonstrating that maritime archaeology is well suited to the three-tiered analysis an Annales approach promotes. Staniforth adopts Braudel's three scales of history in his 1997 article *The Archaeology of the Event – The Annales School and Maritime Archaeology*, and 2003 work *Material Culture and Consumer Society*, and Delgado utilizes Annales School in his recent maritime investigation of the San Francisco waterfront (Staniforth 1997, 2003:19,27; Delgado 2009:14,28).

The Elizabeth City Ships' Graveyard is the first abandonment complex to be analyzed using Annales-based principles. In his two applications of Annales principles, Staniforth focused on specific shipwrecks, their cargo and artifacts. Delgado applied Annales principles to his investigation of the San Francisco waterfront, but did not treat the ships and buried stores as an abandonment complex. Analysis of the Elizabeth City Ships' Graveyard focuses specifically on

the application of Braudel's model of hierarchical temporal rhythms, the *longue durée*, *conjunctures*, and *l'histoire événementielle* (see for example, Braudel 1972, 1973).

Peter Burke, author of *The French Historical Revolution: The Annales School 1929-1989* (1990), declared that "it remains Braudel's personal achievement to have combined the study of the *longue durée* with that of the complex interaction between the environment, the economy, society, politics, culture, and events" (Burke 1990:42). Burke wrote favorably about Braudel's complete synthesis of all those elements of society; however, realistically Braudel disfavored the smallest timescale of his model, *événements*, and included them only as a conciliatory gesture to satisfy and gain favor with narrative historians. Le Roy Ladurie, an Annalist and former student of Braudel's, disagreed with Braudel on the importance of microhistory arguing that *l'histoire événementielle* should be viewed as critically significant events that break established patterns and thus prove informative (Knapp 1992:6; see also Le Roy Ladurie 1979:111-116). Virginia E. Dellino-Musgrave (2006) embodies Ladurie's position in her exploration of two British shipwrecks and their cargos "as embodiments of 18th century social relations."

Ladurie's position is especially applicable to the Elizabeth City Ships' Graveyard where a wealth of information can be ascertained from the abandoned vessels that populate the graveyard. The abandoned ships represent Ladurie's 'break from a normal pattern of use,' and they reflect changes in patterns within the associated culture's society, economy, technology, or a combination thereof. Keeping Ladurie's criticism in mind, Braudel's tripartite model, which incorporates influences from the macrophenomena down to microphenomena, will be applied without prejudice to one level of history over another. To present the most accurate picture of the Elizabeth City Ships' Graveyard, Braudel's theoretical principles grounded in the Annales

School must be applied in conjunction with concepts from abandonment theory and behavioral archaeology as well as site formation processes.

Site Formation and Abandonment Processes

Significant work has been conducted on the behavioral basis of abandonments. Michael Schiffer's work focuses on site formation processes and takes a behavioral approach to archaeology (Reid et al. 1975; Schiffer 1987, 1995; Skibo and Schiffer 2008). His work pioneered the idea that archaeologists cannot draw conclusions directly from the remaining material culture but must account for the transformations artifacts undergo from deposition to discovery (Schiffer 1987:10). Schiffer (1995:35; see also Collins 1975) states that

between the time artifacts were manufactured and used in the past and the times these same objects are unearthed by the archaeologist, they have been subjected to a series of cultural and noncultural processes which have transformed them spatially, quantitatively, formally, and relationally.

Accepting this principle to be true, archaeologists must identify and understand the transformations the artifact has undergone prior to drawing conclusions from the past cultural system associated with that artifact. To decipher these transforms Schiffer proposes two archaeological laws regarding distorting factors, *c-transforms* or cultural conditions, and *n-transforms* the noncultural or environmental factors (Schiffer and Rathje 1973; Murphy 1983; Schiffer 1987, 1995). These transforms, though designed with terrestrial sites in mind, can be applied to the maritime abandonment complex at Elizabeth City.

N-Transforms

Noncultural formation processes concern the changes sites and artifacts undergo post deposition. Environmental factors are the most developed area of archaeological knowledge, according to Schiffer (1995:38), and allow archaeologists to predict interactions between the

cultural material and the noncultural forces working on them. Keith Muckelroy initiated the implementation of site formation processes in a maritime context. Muckelroy (1978:158), operating under the assumption that maritime archaeology deals with shipwrecks in the strictest sense, declared:

The environmental factors operating under water are different from those found on land, and are outside the range of normal experience. Furthermore, human interference, undoubtedly the most important destructive agent in a terrestrial context, is minimal under water, and limited to a few identifiable activities. Finally, the same factors are operative on every site, although in varying degrees, so that the archaeological evidence is more homogeneous in this sub-discipline than in most others.

While these principles apply to the typical shipwreck, a vessel catastrophically or accidentally lost to an underwater environment for an undetermined amount of time, abandoned vessels represent a different situation with their own set of environmental and cultural transforms (Richards 2008:51-58). The abandonment sites in Elizabeth City are, for the most part, not shipwrecks in the traditional sense and represent both partially inundated and completely submerged vessels. The vessel remains occupy a setting where an aqueous environment interacts with ongoing cultural interaction. This distinctive set of circumstances, specific to ship abandonments, allows researchers to investigate not only the noncultural environmental transformations at work on the complex, but the cultural interactions reflected in the abandonment complex as well.

C-Transforms

Cultural transformations refer to the human behavioral processes that influence sites or artifacts after their initial use. These processes act on material culture in numerous ways within two contextual areas. Human interaction with an element or artifact participating in a behavioral

system is termed *systemic context* while *archaeological context* refers to elements or objects that have passed from an active behavioral system into the archaeological record (Schiffer 1995:26).

Schiffer (1995:26-33) proposes a four stage life-cycle for elements of a cultural system in order to study the systemic and archaeological contexts (Figure 2.1). To begin an artifacts' use life in the systemic context, it is first procured from the environment as raw material. In the manufacturing stage, modifications are made to that artifact resulting in a desired usable product. Following the manufacturing stage, the artifact is put to use for a practical purpose (*techno-function*), a social purpose (*socio-function*), or an ideological or symbolic purpose (*ideo-function*) (Schiffer 1987:14). After the use stage, an artifact can be reused and continue its use life, or be discarded whereby it moves from the systemic context into the archaeological context as refuse. Schiffer stresses the fact that artifacts do not have to pass through every stage of the life-cycle and often do not travel a strictly linear path through the different stages (Schiffer 1972:159, 1995:27).

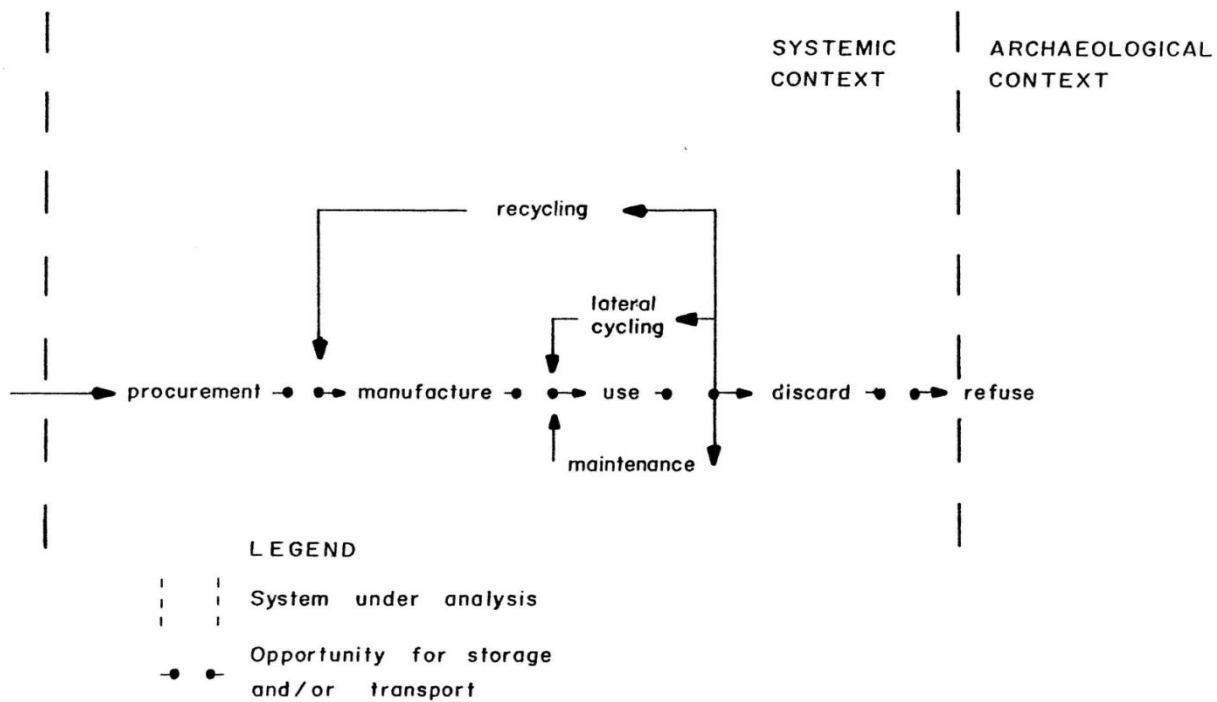


FIGURE 2.1. Schiffer's (1995:28) life-cycle model for durable elements.

Artifacts undergo cultural transformations at every stage of the life-cycle model Schiffer puts forth. The Elizabeth City Ships' Graveyard can be evaluated on two levels when applying the life-cycle model to identify the behavioral processes operating within the abandonment complex. Each abandoned vessel is a single artifact and can be analyzed on an individual basis, and the graveyard as a whole can reveal evidence of various behavioral interactions observed through processes such as reuse, deposition, and abandonment.

Reuse

Reuse is the process by which artifacts are retained within the systemic context to be utilized, in either its original or altered form, rather than being discarded into the archaeological context. Schiffer (1987:28) defines reuse as "a change in user or use or form of an artifact, following its initial use." Reuse is an important element of every society and factors in to the life-cycle model in four variations: *lateral cycling*, *recycling*, *secondary use*, and *conservatory processes*.

Lateral cycling involves an alteration in the user of an artifact while the artifact retains its form and use. Lateral cycling is typically difficult to document in the archaeological record as the form and function of the object remains the same as the object passes from one owner to the next, usually without record of the change in user. Schiffer (1987:29) points out evidence of lateral cycling in modern America through theft, gifting, and sale. Within the maritime context there is a certain amount of discernable lateral cycling with the availability of vessels' bill of sale and transfer of ownership documentation (Richards 2002:44, 2008:55). Uncovering lateral cycling in the Elizabeth City Ships' Graveyard will reveal information about the behavioral processes that led to abandonment.

Recycling occurs when, after a period of initial use, an artifact reverts to the manufacturing process where the form and/or function of that element are significantly altered to create a new object unrecognizable from the original (Schiffer 1987:29; Richards 2008:55). Recycling is easily distinguishable from maintenance, another process that alters an artifact's form. *Maintenance* restores the artifact's original function through repair while recycling involves the creation of a new artifact from the old. Richards (2008:55) puts recycling into a maritime context ascribing maritime salvage of materials as an example of this process. He also includes the complete dismantling or breaking of ships under the recycling process. According to Seeb (2007:18), the reason for the prevalence of this behavior stems from an economic drive and argues that materials salvaged from discarded watercraft and intended for re-manufacture represents a situation where the benefits outweigh the cost of obtaining the materials in this manner. Salvage behaviors are seen in the Elizabeth City abandonment complex but require historical documentation to determine whether the material salvaged was recycled, laterally cycled, or treated to a different reuse process.

Secondary use refers to the change in an artifact's function with little or no change in the original form. One caveat to this definition is that in some cases, a change in form, through use-wear, breakage, or maintenance, is what makes the artifact useful in a new function (Schiffer 1987:30-31). A modern example of this behavior is visible in the antiques industry where used and heavily worn objects are purchased and repurposed. Fifty-year-old cameras decorate bookshelves, farmers' wagon wheels are incorporated into front porches, and ships' anchors become lawn ornaments. In maritime archaeology, secondary use is often found within the ships themselves. Richards (2008:55) identifies the transformation of ships into support roles such as lighters and hulks as secondary use. Additionally, a change in cargo would alter a vessels'

function and could change a merchant ship to a passenger ship with little physical alteration. Schiffer (1987:31) maintains that there must be physical evidence on an object to infer secondary use in the archaeological record. Vessels in the Elizabeth City Ships' Graveyard reveal a change from primary to secondary use through alterations visible in the archaeological record.

Conservatory processes are a version of secondary use where the function of an artifact changes from techno-function to either socio- or ideo-function for the purpose of permanent preservation (Schiffer 1987:32; Richards 2008:5). This phenomenon exists in a maritime context when a ship is removed from its primary or secondary use context, usually shipping, and is conserved for its perceived historical value, for example USS *Constitution* (1797) in Boston, Massachusetts. Towns and cities heavily involved in maritime activities often display maritime related artifacts symbolically reinforcing their ties to the industry in a public arena, as seen in St. George's Parish and Dockyard, Bermuda (Figure 2.2). Seeb (2008:20) documented a similar behavior in Wilmington, North Carolina, the port town across the river from the Eagles Island Ships' Graveyard, but no such collective behavior is seen in Elizabeth City and conservatory processes do not apply to this investigation.

In order for these four reuse processes to take place there must be what Schiffer terms a *reuse mechanism*. A *reuse mechanism* is an activity that transfers an artifact from user to user and facilitates lateral cycling, recycling, secondary use, and conservatory processes (Schiffer 1977:32, 1987:36; Schiffer et al. 1981:69). The list of reuse mechanisms societies have invented is extensive, some examples of this are; swap meets, garage sales, antique stores, inheritance, dowries, and gifts (see Schiffer 1987:36-37 for a more extensive inventory).



FIGURE 2.2. Maritime artifacts on display in Bermuda demonstrate conservatory process in practice. Cannon at the Dockyard's Maritime Museum (top left), Ship's anchor in St. George (top right), and a cannon on Ordinance Island, St George, Bermuda (bottom). (Photographs by author 2009).

Deposition

Just as a reuse mechanism facilitates the transition of artifacts within a systemic context, there are discard processes that usher the *cultural deposition* of material from the systemic context to the archaeological context (Richards 2008:55-56). When an artifact is no longer useful in its function, and is not capable of being reused in a techno-, socio- or ideo-function, it is

discarded and enters the archaeological context. This artifact no longer participating in an active behavioral system is called *refuse*. The vessels populating the abandonment complex surrounding Elizabeth City are refuse because they were abandoned and the maritime industry they were once participants in has dissipated.

Discard often results from “unrepairable damage or mechanical ineffectiveness because of breakage, use-wear, or deterioration” (Richards 2008:56). Schiffer (1995:38) also outlines the occasions where artifacts are culturally deposited because they are antiquated, have little or no value in a reuse capacity, or are accidentally deposited in the archaeological context.

The archaeological context is where archaeologists can observe and record imprints of past behavioral processes that appear in the deposited cultural material, or refuse. Schiffer offers four dimensions that assist in identifying the traces left by these behavioral processes: *formal dimension*, *frequency dimension*, *relational dimension*, and *spatial dimension* (Schiffer 1995:15). These four dimensions of variability are directly relevant to studies of ships’ graveyards.

The *formal dimension* refers to any measurable quality of an artifact. Attributes such as length, width, depth, color, weight, and chemical composition are examples of formal dimensions. Artifact typology is largely based on the variability of formal dimensions. Additive, reductive, and chemical processes alter the formal dimensions of artifacts and must be taken into consideration when analyzing artifacts in the archaeological record because as Schiffer (1995:17) points out, “the possibility that any item or deposit survived to the present without undergoing some formal change is indeed slight. Most in fact underwent many alterations, simultaneously and sequentially.” In maritime archaeology, vessels often demonstrate changes in their formal dimensions, manifesting in changes in propulsion and size. These alterations are visible in the

archaeological remains, however, historical documentation aids the identifications of the formal dimension variations.

The *frequency dimension*, or number of times a specific artifact occurs in the archaeological record, is with few exceptions the most clear-cut variable. In terms of a ships' graveyard, this is the number of each vessel abandoned in the complex. This seems like a relatively straightforward value, but formation processes acting on the frequency dimension are varied and complicated. Each process often targets a specific aspect of an artifact. Variables in frequency are currently identified on a case-by-case basis when possible, but more research is needed to understand frequency variability and isolate the processes that affect it within the archaeological record (Schiffer 1995:18-19). This is particularly applicable in a maritime environment where land, water, and air environmental processes interact to different degrees on diverse aspects of the abandoned vessels.

The *relational dimension* documents the "patterns of co-occurrence of artifacts" in an archaeological context. Because of the increased use of statistical analysis, these co-occurrences are also referred to as associations, of which there are two major types; *singular associations* and *recurring associations*. A *singular association* is two or more artifacts of a similar type located in close proximity to each other. *Recurrent associations* are found when the same artifacts occur together repeatedly over different locations (Schiffer 1995:19). Applying these terms to abandonment studies, Richards (2008:56-57) differentiates the two ideas. Finding two types of watercraft abandoned together is a singular association, however, if those same two watercraft types were found abandoned together in multiple similar locations it would be considered a recurrent association.

Discard processes also allow for the analysis of location and spatial relationships in an abandonment complex. *Spatial dimension*, an artifact's location, is the last discard process. Schiffer (1995:17) argues and Richards (2008:56) agrees that, "in the field, artifact locations are recorded with reference to grid systems, but locations can also be described in terms of behaviorally significant divisions of space." There are two main divisions in discard space. *Primary refuse* occurs when artifacts are discarded in the primary activity area while *secondary refuse* arise from artifacts discarded in a designated area away from its area of activity (Schiffer 1995:18; Richards 2008:56). Schiffer (1995:59) attributes the limited occurrence of primary refuse to its spatial limiting factors within an active activity area. He also maintains, "people tend to dump trash where others have previously dumped trash; thus concentrations arise" (Schiffer 1996:62). This variation of the spatial dimension is more difficult to apply to abandonment sites because it is in the nature of watercraft to operate over various locations and throughout various waterways. Richards (2008:56) clarifies the situation stating that ship primary refuse is where watercraft remain in the area of systemic context use. These are activity areas such as docks, wharves, or designated mooring locations. Keeping Richards' primary refuse definition in mind, abandoned vessels occurring outside the normative systemic context areas are secondary refuse.

The Elizabeth City Ships' Graveyard represents a large abandonment assemblage with complex spatial variability. The abandonment complex contains areas of primary and secondary refuse as watercraft were discarded in areas of maritime use in the systemic context as well as in waterways adjacent to primary activity locations. Evidence of clustering in different areas of the graveyard both reaffirms Schiffer's claims about secondary refuse behaviors and argues that clustering occurs in primary refuse sites as well.

Abandonment

Abandonment is a term that has many definitions and meanings depending on the context in which it is used. Common use of abandonment implies desertion, to forsake utterly, and to relinquish completely and finally. The behavior of abandonment is viewed by sociologist Henrich R. Greve (1995:445) as the “observed cessation of some activity or structural feature by [an] organization,” while Schiffer (1995:89) views abandonment as “the process whereby a place – an activity area, structure, or entire settlement – is transformed to archaeological context.”

Archaeological studies prior to the 1970s were limited in their views, identifying abandonments in the catastrophic sense in locations such as Pompeii, and in regional exodus as seen in the Four Corners area of the American Southwest at AD 1300 (Cameron 1993:3). Cameron and Tomka’s (1993) book, *Abandonment of Settlements: Ethnographic and Archaeological Approaches*, contains a wide range of case studies and analyses of various abandonment situations. Research over the past forty years has wrought a change in archaeologists’ perception of abandonment. Archaeologists understand abandonment to be a natural settlement process and, equally important, a site formation process (Cameron 1993:3; Tomka and Stevenson 1993:192). Abandonment should be evaluated as a continuum that ranges from permanent settlement to complete abandonment rather than a solitary event (Rothschilde et al. 1993:136; Tomka and Stevenson 1993:192). These investigations are predominantly based on terrestrial settlements, but the principles involved can be applied to maritime abandonment sites as well.

Abandonments, as they relate to ships and the maritime environment, have additional definitions, and as Richards (2008:7) asserts, they must be viewed as more than “shipwrecks missing the drama of wrecking.” Rodgers and Corbin (2002:228), in an investigation into a

abandoned vessel in Edenton, North Carolina, view abandonments as a tool to “glimpse the average maritime workhorse, the unremarkable vessels, seldom discussed in archaeological circles, but invariable as a means to examine both ship construction and the material culture left within.”

In years past shipwreck was a blanket term that conveyed the state of any watercraft not in working order. While Shomette (1995:6-7) acknowledged a difference between abandonments and shipwrecks, Richards (2008:8) disagreed with his distinction that abandoned vessels are “an important variation of the shipwreck category,” believing instead that shipwrecks are a product of a type of abandonment activity. Richards synthesizes various definitions of abandonment in a maritime context in his book *Ships’ Graveyards: Abandoned Watercraft and the Archaeological Site Formation Process* (2008:7) as “the giving up of control of a vessel upon its *constructive total loss*.” He further refined abandonment definitions related to maritime cultural landscapes by identifying three sub-categories, *catastrophic abandonment*, *consequential abandonment*, and *deliberate abandonment*.

Richards defines *catastrophic abandonment* as the abandonment of a vessel as a necessity to save lives aboard. Examples of such behavior is seen in the disasters of RMS *Titanic* (1914), HMS *Pandora* (1791), and *Sea Venture* (1609) where the ships were abandoned in the face of impending doom. In each instance the value of the ship and its cargo was overlooked in favor of sustaining life with the result that all became shipwrecks in earnest (Richards 2008:8-9).

Consequential abandonment defines a situation where a vessel is abandoned as a preventative measure to preserve “lives, cargo and other structures from destruction or damage” because the potential for loss is present. Richards (2008:8) points out that, in cases of consequential abandonment, thought is given to the value of ship and cargo and actions are taken

to limit the extent of damage where inaction would render worse results. An example of consequential abandonment is the decision to scuttle a ship in an accessible location when the looming alternative is the ship wrecking along a rocky coast destroying vessel, cargo, and endangering lives. A degree of forethought is possible when confronted with a consequential abandonment situation and could therefore be called *deliberate wrecking* (Richards 2008:8).

Richards considers both catastrophic and consequential abandonments cases of *premature loss*. With *deliberate abandonment*, the third type of abandonment, ship abandoning involves premeditation and planning. Deliberate abandonment differs greatly from catastrophic and consequential abandonment because human planning determines the discard location, cultural material remaining in the vessel, and the condition the vessel's structure when abandoned (Richards 2008:10). Understanding the behavioral choices made regarding abandonment is essential to the scope of this research.

Taken all together, the definitions provided include abandonment causes ranging from thought out, intentional actions to cataclysmic, unintended occurrences. For the vast majority of vessels populating the ships' graveyard in Elizabeth City, the most applicable definition is that of deliberate abandonment. Having successfully defined the subject of this investigation, there are additional processes at work related to abandonment behaviors.

De facto refuse and *curative behavior* are two primary aspects of the abandonment process. Schiffer defines *de facto* refuse as the cultural material left behind when an area is abandoned, despite their viability as functioning items. Storage pits, caches, and clustering are elements of *de facto* refuse behaviors. *Curate behavior*, on the other hand, is a process whereby functioning or repairable items are removed from the impending abandonment area and transported to another location for reuse or continued use (Schiffer 1987:89-90).

Stevenson (1982) proposed that to understand *de facto* refuse the specific characteristics of the abandonment process must be identified. He maintains that the two most important conditions to evaluate are one, the rate at which the location was abandoned, and two, the degree of anticipation to return to the activity area. Combining these two conditions Stevenson created four criteria for understanding abandonment behaviors; *rapid abandonment-anticipation of return*, *rapid abandonment-no anticipation of return*, *gradual abandonment-anticipation of return*, and *gradual abandonment-no anticipation of return* (Stevenson 1982; Seeb 2007:25). As previously stated, this thesis primarily deals with deliberately abandoned watercraft implying that the most likely decision making behavior associated with these vessels is the gradual mode of abandonment.

Lightfoot (1993:166) argues that the degree of *de facto* refuse and curate behavior is determined by the culture's post depositional access to the abandonment area. The distance from the current activity area to the abandoned area, ease of transportation between the two, and the presence of additional cultures in the abandonment area that could benefit from material left behind are all factors that determine curate behaviors and *de facto* refuse (Lightfoot 1993:166). Essentially, the amount of valuable cultural material remaining on an abandoned ship is related to that culture's anticipation of successfully returning to that abandonment to salvage material at a later date. To put it another way, a high percentage of *de facto* refuse on an abandoned vessel would correlate with a relatively low distance and high transport capability to and from the new activity area, and a low probability of scavenge activity by other cultures.

Multiple factors affect the level of *de facto* refuse in the archaeological context making it an unreliable representation of cultural material in the systemic context. Prior to deposition, processes such as lateral cycling, recycling, secondary use, and conservation decrease the

amount of material that enters the archaeological context as *de facto* refuse. Post deposition, reclamation processes such as scavenging, looting, and salvage all deplete the amount of *de facto* refuse remaining in archaeological context for interpretation (Lightfoot 1993:16). An additional correlate demonstrates that the proximity of the abandonment area to an active settlement increases the above stated depletion processes and decreases the amount of *de facto* refuse preserved in the archaeological record. The abandonment complex under investigation surrounds Elizabeth City, a settlement uninterrupted in habitation, making depletion processes a viable concern in this analysis.

Reclamation Processes

The transition of artifacts from the systemic context to the archaeological context, as seen in Schiffer's life-cycle of durable elements in Figure 2.1, should not be viewed as an irreversible process. Richards (2008:58) views the *reclamation process* as a form of reuse where recycling occurs, while Schiffer (1987:99) defines it as the transformation of artifacts from the archaeological context back to a systemic context. Alternately, Seeb (2007) labeled these behaviors additive and reductive processes during her analysis of the Eagles Island Ships' Graveyard. While *salvage*, *scavenging*, *looting* and *collecting* are seen as depletion processes, they are also reclamation processes. A number of these multipurpose processes are observed in the Elizabeth City Ships' Graveyard, and following the precedent set by Seeb (2007) are collectively called additive and reductive processes.

Richards (2008:56) cites *salvage* and *scavenging* as the two most common reclamation processes at work on abandoned vessels. He identifies these processes in two behaviors, "the salvage of objects or structures (*de facto* refuse) for reuse and the salvage/scavenging of structures for raw material" (Richards 2008:56). Schiffer (1987:104) defines salvage as the

reincorporation of *de facto* refuse, both artifacts and structures, into the systemic context by the culture that originally abandoned the site. Various maritime archaeologists have attempted to categorize salvage; with both McCarthy (2000) and Gibbs (2006) proposing classifications that distinguish salvage phases and participants. Richards (2008:155) refines these previous attempts at salvage classification and tailors his three-category system to the specific needs of abandoned watercraft. *Primary salvage* refers to salvage activity carried out by the owner or operator of the vessel prior to the final deposition. *Secondary salvage* is also (usually) carried out by the owner or operator of the vessel in the short period following final deposition or post-abandonment. *Tertiary salvage*, on the other hand, is salvage not sanctioned by persons associated with the vessel that occur over a longer period of time and are often opportunistic in nature.

In contrast to salvage, common definitions of *scavenging* imply exploitation of deposited materials with an unsanctioned or illegal aspect to the behavior (Schiffer 1987:106-107; Richards 2008:58). This behavior is exhibited by participants of the original abandonment culture and is often driven by expectations of economic gain. *Gleaning* is a scavenging behavior Schiffer (1987:107) describes as occurring predominantly at *secondary refuse* areas, areas of deposition not associated with the object's use. This directly relates to abandoned watercraft. Vessels abandoned in a location unassociated with its original activity area present an opportunity for people to profit from any remaining valuable material. The propensity for gleaning from an abandoned vessel is determined by the proximity of the secondary refuse site to the activity area, accessibility to that discard site, and the dispersal of material throughout the site. Scavenging of specific artifacts will also be determined by factors such as the item's projected longevity, current condition, availability and demand in society, desirability and potential utility (Schiffer 1987:106-111).

Unlike salvage and scavenging behaviors, *looting* and *collecting* are behaviors perpetrated by participants in an alternate systemic context from which the artifacts were originally deposited (Schiffer 1987:114). This disjointed cultural diffusion is what Richards (2008:58) refers to as “unsanctioned, illegal, and often clandestine salvage of material from watercraft abandonment sites for profit.” Looting, collecting, scavenging, and salvage are all reintroduction processes associated with the abandonment complex under investigation.

Conclusion

Binford poignantly outlined one of the most basic methodological principles of archaeology in his 1964 article on research design when he stated “the loss, breakage, and abandonment of implements and facilities at different locations, where groups of variable structure performed different tasks, leaves a ‘fossil’ record of the actual operation of an extinct society” (Binford 1964:425). Schiffer (1995:25) boldly proclaims that this line of thought is “Perhaps the most important assumption made by many archaeologists that the spatial patterning of archaeological remains reflects the spatial patterning of past activities.” He believes this method of direct interpretation of past behaviors based on current spatial patterning is faulty in its application, and instead argues that site formation processes are the building blocks of a comprehensive archaeological investigation.

Identifying site formation processes is the first step in assessing the archaeological context of an abandonment site, after which patterns relating to behavioral practices can be inferred. Evaluating the different formation processes acting on the abandonment site, cultural and noncultural transformations offer direct insight into the behaviors that created the archaeological context. Applying Schiffer’s life-cycle model to watercrafts allows the researcher to isolate technological, economic, and social influences from construction and use to discard

and reclamation. This information provides the foundation from which the Elizabeth City Ships' Graveyard can be placed into historical context based on Braudel's three-tiered model of hierarchical temporal rhythms, the *longue durée*, *conjunctures*, and *l'histoire événementielle* (see Chapters Five, Six, and Seven respectively).

CHAPTER THREE: METHODOLOGY

Introduction

Research for this investigation is divided into three related categories. Comprehensive historical research revealed a framework in which Elizabeth City and its surrounding areas developed over time. Archaeological fieldwork and research provided data on the Elizabeth City abandonment complex. Finally, geospatial analysis of the correlated historical and archaeological avenues identified temporal and spatial patterns within the graveyard and statistical analysis revealed relationships between the abandonment complex and Elizabeth City's economic, social, and technological development on Braudel's three-tiered hierarchy of history.

Historical Research

Methodical historical research was essential to assembling a complete history of Elizabeth City. Research identified the economic, social, and technological trends and events that led to the abandonment behaviors seen in the Pasquotank River. The city's developmental chronology was used to track and analyze these trends in maritime related activity throughout Elizabeth City's entire history and identify how they are reflected in the abandonment complex under investigation. It was essential to collect a wide range of historic documentation to compile a complete account of Elizabeth City's development and their maritime heritage from a number of different repositories.

Previous Historical Research

Elizabeth City and associated areas such as the Dismal Swamp Canal, Pasquotank River, and Albemarle Region have been the subject of many books, and consulting this previous research provided a large body of knowledge to confer with when writing this thesis. Elizabeth City, from its establishment through the Civil War and into the reconstruction era that followed,

is well documented in North Carolina histories (Vaughan 1895; Hariot 1903; Lefler and Newsome 1954; Robinson 1955; Griffin 1970). Recent historical works provide additional insight into the social, economic, and political atmosphere of North Carolina, which includes Pasquotank County and Elizabeth City (Butler and Watson 1984; Ready 2005; Meekins 2007). Additionally, the Dismal Swamp Canal is the subject of many books and Elizabeth City's proximity to the south end of the canal inevitably leads to its incorporation in these volumes (Pugh 1957; Brown 1970; Federal Writers Project 1937, 1939; Simpson 1998; Cecelski 2001).

Locations of the abandoned vessels that populate the Elizabeth City Ships' Graveyard in the Pasquotank River were ascertained through a variety of different avenues. Historic maps of the Pasquotank River at Elizabeth City reveal early attempts to identify the locations of wrecks along the river that pose navigational hazards. The 1935 Army Corps of Engineers Map detailing the Pasquotank River around Elizabeth City was particularly helpful during the temporal analysis of the graveyard's development (Figure 3.1). The map details the location of at least 28 wrecks surrounding Elizabeth City. While these vessels are labeled as wrecks, they are more likely referring to abandonments, some of which may still be present in the assemblage under investigation. Comparing vessels' appearance in the historical record via maps and photographs assists in abandonment identification and dating.

J.Y. Joyner Library

East Carolina University's Joyner Library maintains an extensive collection of North Carolina related sources that provided a wealth of information. The Joyner stacks house a bevy of books on archaeology, maritime history, and countless different archaeological, historical, and economic theories that were integral to writing the heart of this research.

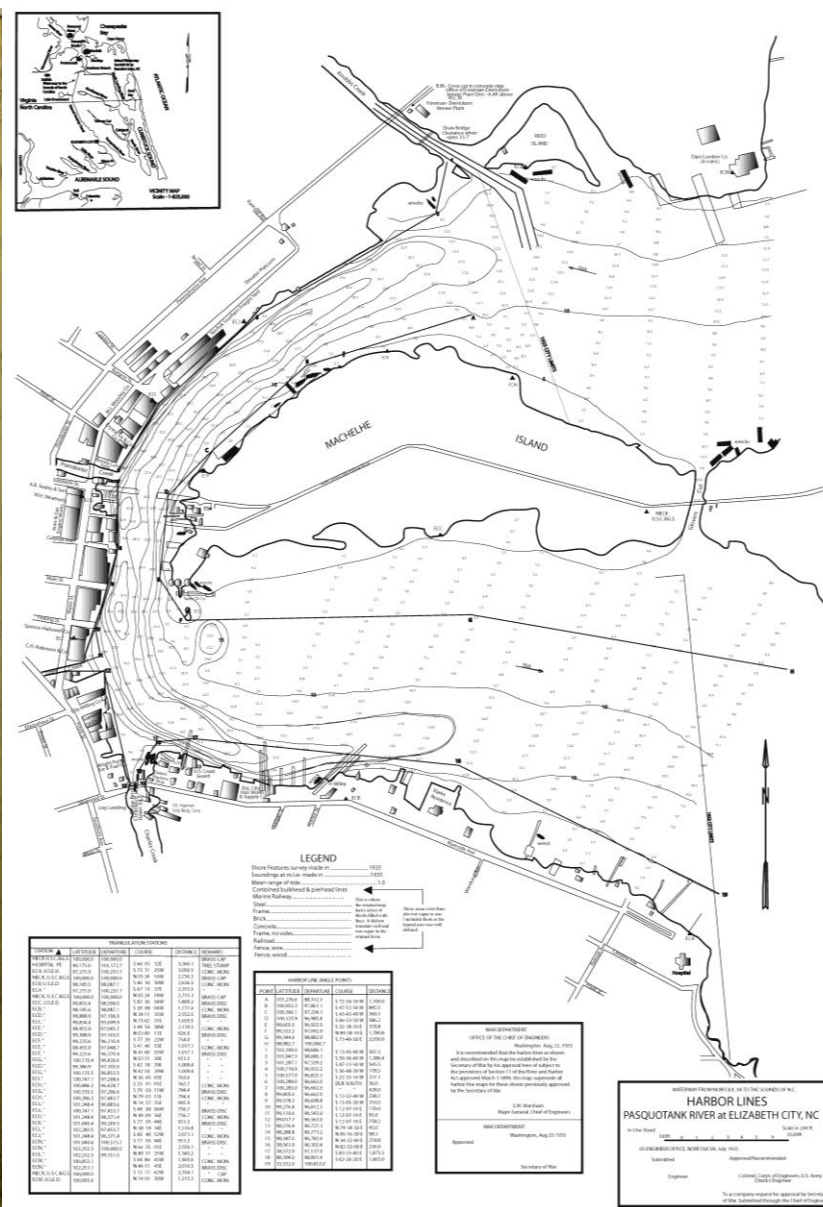


FIGURE 3.1. Original 1935 Army Corps of Engineers Map highlighting Elizabeth City's historic wrecks on the left and its digitization on the right (Bran 2010).

The North Carolina Collection in Joyner Library houses an extensive collection of resources, both primary and secondary, relating to North Carolina's history. The collection includes personal papers, court records, historic maps, charts, and newspapers that formed the foundation of Elizabeth City research. William A. Griffin's thesis turned book *Ante-bellum Elizabeth City: The History of a Canal Town* (1970) chronicled Elizabeth City's development from colonial settlement through the Civil War and was one of the most helpful secondary sources. Elizabeth City has boasted a large number of newspapers over the years, many of which were available on microfilm from the North Carolina Collection (NCC) providing access to vastly helpful primary sources. Additionally, the NCC contains the vessel registries for the port of Elizabeth City on microfilm. Attempts at vessel identification relied upon contemporary newspapers, photographic evidence, and historical documentation such as company papers and ship registers. Barges, the vast majority of vessels abandoned in the ships' graveyard, are rarely registered, named, or insured. The vessel registries, however, did assist in identifying ship owners by using vessel type, dimensions, or dates as search criteria.

Research in the Special Collections and the University Archives at Joyner Library focused on Elizabeth City's maritime involvement directed by questions pertaining to the economic development, social changes, and technological innovations throughout the city's development. These collections supplied primary documentation from the Samuel Lloyd Sheet Papers 1878-1928, the Cooke Family Papers, Thomas Hunter Papers 1806-1906, and additional papers from Elizabeth City ranging from 1887-1933. Information gathered from these sources provided a familiarization with contemporary ship owners, maritime businesses, and business practices in Elizabeth City throughout the 19th century and during the first half for the 20th century.

Elizabeth City Sources

Elizabeth City State University, the College of the Albemarle, and the Albemarle Museum were consulted for information pertaining to the city's history and maritime influences. Personal papers and local business records were of particular interest for this investigation. The courthouse in Elizabeth City houses the Pasquotank County records, especially land deeds from the eighteenth century through current property ownership. This source was invaluable to determine where the maritime related industries were located as well as their ownership and dates of operation. Additionally, the Pasquotank Historical Society provided access to a wealth of information such as personal papers, historic photographs, and census information. Professional repositories were not the only avenue pursued to compile the most complete history possible.

In addition to professional repositories, two Elizabeth City residents provided information on the Elizabeth City abandonments, the vessels still in the archaeological record as well as vessels known only through historic sources. Lemuel S. Blades III spent a day talking with the author about the derelict ships in the river and shared his personal photo albums and 1940s journal for the advancement of this research. Mr. Blades also provided an unmeasured sketch that he drew in 1946-1947 detailing the locations of no less than 16 previously unknown abandonments in the graveyard (Figure 3.2). The vessels mentioned in this sketch were added to the updated site plan based on approximate locations and the accompanying descriptions regarding vessel abandonment dates, hull conditions, and spatial orientation. Jeb Stuart provided additional supplementary information relating to the bay barges abandoned in the river. Mr. Stuart is the descendant of two of the largest lumber families in Elizabeth City, the Foreman and Blades families. He shared family business records and personal research that provided the

names of eight bay barges that operated out of Elizabeth City, some of which may be abandoned in the ships' graveyard. Both Mr. Blades and Mr. Stewart graciously gave me permission to include their personal papers, photographs, research, and stories in this thesis, without which our understanding of the graveyard would not have been as complete.

National and State Archives

The North Carolina Department of Cultural Resources' State Archives and the National Archives in Washington, D.C. house numerous primary documents necessary for comprehension of Elizabeth City's history, culture, economy, and industrial growth. Solid understanding of the city's background created the framework for studying the abandonments in the surrounding waterways, and the archives supplemented the sources found in Joyner Library. The North Carolina Archives provided primary documents on the early formation of Elizabeth City in the form of early government documents, county records, and early newspapers. The National Archives houses the official records of the U.S. Coastguard, including logbooks from the Coastguard Air Station located in Elizabeth City containing accident reports involving vessels much like the ones abandoned in the Elizabeth City Ships' Graveyard.

Previous Archaeological Research

Reviewing work already completed by archaeologists provided direction for the fieldwork planned for this thesis. Previous archaeological research came from multiple sources. First, the North Carolina Underwater Archaeology Branch (UAB) was contacted to gain access to state files containing documentation of any known vessels within the state's waterways. These internal reports detail actions to locate, record, and identify the abandoned vessels in the Pasquotank River near Elizabeth City. Tidewater Atlantic Research Group Inc. has also worked in the Pasquotank River around Elizabeth City and access to their findings supplemented the

archaeological research. These previous archaeological investigations help to understand the evolving life of the abandonment complex, aided identification of any spatial or depositional patterns, and proved essential when determining the graveyards' temporal development.

In September 1985, as part of the environmental review program for terrestrial and submerged cultural resources, state archaeologists Richard W. Lawrence and Mark Wilde-Ramsing of the North Carolina Underwater Archaeology Branch (NCUAB) investigated 23 submerged vessels surrounding Machelhe Island on the Pasquotank River (Wilde-Ramsing 1985). The report to the North Carolina Department of Cultural Resources identifies the vessels by designated site numbers (001PQR-023PQR) and includes initial observations and location descriptions of the vessels.

Gordon P. Watts Jr., of Tidewater Atlantic Research, provided additional archaeological information in his October 1986 preliminary report to the Wilmington District Corps of Engineers. Watts examined hull structure and material remains of five vessels and offered his professional opinion on the vessels' ability to provide significant information (Watts 1986). Of these vessels (P-01-P-05), one appears to overlap with Lawrence and Wilde-Ramsing's prior findings (P-01 corresponds with vessel 0023PQR), while four vessels seem to be previously unknown. Following submission to the NCUAB, the four unknown vessels were assigned the official numbers 0024PQR - 0027PQR (Kimmel 1985).

Watts investigated another area of Machelhe Island waterfront under a different Tidewater Atlantic Research Inc. contract in April 1990 (Watts 1990). Watts conducted a submerged cultural resource survey on the western and southern ends of Machelhe Island in response to the proposed marina development. Vessels "A" and "B" were located during a wading survey, and vessels "C" and "D" were located while diving to verify side scan sonar

targets. Vessel “A” corresponded to 0021PQR, an abandoned boat previously recorded by Lawrence and Wilde-Ramsing in 1985. Vessels “B,” “C,” and “D” were previously unknown and assigned the official numbers 0030PQR, 0031PQR, and 0032PQR respectively (Watts 1990; UAB 2009).

Additional archaeological reports pertaining to the abandonments surrounding Elizabeth City were consulted. NCUAB archaeologists investigated a sunken barge 0029PQR in August 1987 following a landowner Paul Stevenson’s request to build a bulkhead along the shore. In 2004, a remote sensing survey by Bottom Image Side Scan Sonar Mapping identified 0028PQR, 0037PQR, 0038PQR, and 0039PQR (UAB 2004: 2-6). A sunken barge in front of the Bible College, 0028PQR is the only wreck within the direct area of this investigation, however, 0037PQR, 0038PQR, and 039PQR, form a more complete picture of the abandonment behavior along the entire Pasquotank River. Local avocational archaeologists have discovered a number of other wrecks, 0042PQR-0049PQR, in a section of the Pasquotank River north of Elizabeth City known as Moccasin Track (UAB 2009:2-3). This assemblage of vessels includes the Civil War Confederate schooner *Appomattox* (0049PQR) (Lawrence 2008:11). Vessels not within the direct area of this inquiry demonstrate abandonment behaviors throughout the entire River.

Problems with Primary Source Material

There are often major problems when attempting to identify abandoned ships in the historical record, and this was especially true for the vessels in this investigation. The vast majority of vessels within the Elizabeth City Ships’ Graveyard are work vessels, barges to be precise, and remain unidentified despite the author’s considerable search for primary source documentation. Without specific identification information such as official vessel number, year built, or name, the ships cannot be positively identified through the normal means, namely

Merchant Vessels of the United States or *Annual List of Merchant Vessels of the United States*.

Local newspaper records often report maritime and shipping news and can be helpful in identifying a vessel, but watercraft such as barges and workboats were rarely considered newsworthy and show up in contemporary newspapers only rarely. The U.S. Army Corps of Engineers provided some assistance in establishing a timeline for vessel deposition and a general idea of the graveyard's evolution, but were unable to assist with individual vessel identification. Indeed, even utilizing measurements from the archaeological record for identification was unproductive as no less than six of the barges had identical dimensions, and other vessels were too degraded to yield sufficient data to be identified in this manner.

Archaeological Fieldwork

Completing fieldwork on the abandonment complex supplied specific archaeological data, which when combined with the historical research and analyzed, reveals the most complete record of Elizabeth City's maritime history to date. Goals of the fieldwork were three-fold. The primary objective was to establish the extent of the graveyard and produce an accurate map representing the spatial patterning of the vessels. The second aim was to conduct individual site inspections to obtain observations about vessel type, construction, relative position, environmental conditions, depositional characteristics, and salvage activity. Researchers created detailed site maps for a representative number of the individually inspected vessels. The third goal was to document the abandonment complex photographically and with a Global Positioning System.

The author divided fieldwork into four stages. The first stage of was an initial reconnaissance carried out by the author, Professor Richards, and two volunteer student researchers, Peter B. Campbell and Jacqueline Marcotte. Researchers rented the 24' Carolina

skiff *Flounder* from the ECU's Department of Diving and Water Safety to investigate charted wreck sites in the Pasquotank River. Primary Elizabeth City site reconnaissance commenced on 25 January 2009, and yielded over 20 partially submerged vessel remains during a visual survey. Evidence suggested the presence of additional completely submerged sites, sites obscured by high water, and areas of the river unreachable by boat warranting further investigation. Surveyors determined that archaeological fieldwork was necessary to obtain accurate records of the observed abandoned vessels.

Reconnaissance also allowed researchers to familiarize themselves with the environment for future fieldwork. The complex, as delineated on 25 January, extended one mile north and one mile south of the U.S. 158 bridge along the east bank of the Pasquotank River. The research area would later be expanded to include additional vessels on subsequent investigations. A majority of the vessels are partially submerged a short distance from the east bank of the river. The Pasquotank River is tinted brown from the tannins leeching into the water from peat bogs in the Dismal Swamp approximately 13 miles north of Elizabeth City. Sediment suspended in the water column creates low visibility and a loose muddy bottom makes wading difficult. Water level is influenced primarily by wind pushing water into the sound and up the river. Environmental observations during the initial survey assisted preparations for the second phase of the fieldwork.

The second stage of fieldwork for the Elizabeth City abandonment complex was a Phase II non-disturbance archaeological survey carried out by East Carolina students as a partial requirement for Dr. Nathan Richards' History 6820 Research Methods in Nautical Archaeology class. Fifteen vessels composed the Phase II survey that occurred on 21 and 22 March 2009. Researchers conducted individual site inspections gathering detailed measurements, construction descriptions, scaled drawings, photographic documentation, and GPS readings at each

abandonment location. Participants wrote fourteen detailed site reports that have been provided to the UAB (Caudell 2009; Dilk 2009; Gandulla 2009; Jones 2009; Lengieza 2009; Mims 2009; Minford 2009; Petrey 2009; Ratcliffe 2009; Rissel 2009; Schnitzer 2009; Siegel 2009; Smeeks 2009; Wittig 2009).

The author was awarded the 2009 North Carolina SeaGrant Maritime Fellowship in June 2009. This fellowship provided funding for the third and fourth phases of fieldwork carried out in Elizabeth City. A 23 August 2009 article (Preyss 2009) in Elizabeth City's local newspaper, *The Daily Advance*, generated public interest in the ships' graveyard project and resulted in two interviews with residents who had knowledge of the local abandonments. The Elizabeth City Ships' Graveyard was further publically featured in SeaGrant's January 2010 edition of the magazine *Coastwatch* (Allegood 2009:12-15).

Side scan sonar was utilized to ascertain the location of any submerged vessels for further investigation. Magnetometer was not used due to the urban environmental conditions; the artificial build up of pipes, power lines, and other trash and debris is not conducive to this type of remote sensing. A cursory remote sensing project on the Pasquotank River completed in 2004 was consulted as part of the archaeological research, however, the scope of this investigation required additional side scan sonar coverage tailored to the specific goals of this research.

The author, Dr. Richards, and two volunteers (Dr. Enrique Reyes and Ms. Erica Waddle) completed a systematic remote sensing survey on 10 June 2009. Researchers rented the 20' skiff *Jones Brothers* from ECU's Diving and Water Safety Office and borrowed a Klein 500 KHz Side Scan Sonar from the Program in Maritime Studies. Remote sensing encompassed an area extending 1.0 mile south of the U.S. 158 bridge and 1.6 miles north of the bridge on the east and

west banks of the Pasquotank River. Researchers completed multiple lanes along the east and west banks of the river with the fish set at a swath of 25 meters (Figure 3.3).

Due to time and budgetary restrictions 100% coverage was not reached. The budget allowed for rental equipment for a single day, which challenged researchers to prioritize the areas of the river to receive higher coverage than others. Based on historical research and precedent in similar ships' graveyard sites, researchers operated under the assumption that the active navigational channel would not hold any significant material remains and therefore did not scan the middle of the river. Additionally, the boat was unable to operate the side scan fish in the shallowest waters directly next to the shore, which created another area without complete coverage. The holes seen in the coverage above the bridge, on the east bank of the river, are the result of researchers avoiding the large barges remaining in the river. The water behind Reed Island was too shallow to operate the boat in creating another area without side scan coverage, however, a canoe survey was completed in that area during the August 2009 fieldwork to supplement the remote sensing. The final area with no coverage is the west bank of the river in front of the Elizabeth City Bible College land. A modern pier structure in front of newly constructed condominiums convinced the researchers that any relevant material remains would have been destroyed during the pier's construction.

Over 30 new targets were identified during analysis of the sonar data. During post-processing, the targets were separated into three categories according to level of interest and significance for researchers to investigate during subsequent field days; Category 1 were suspected wrecks, Category 2 were potential wrecks, and Category 3 were sites of interest (see Richards and Smith 2009 for a complete list of side scan targets and associated categorization).

ELIZABETH CITY SHIPS' GRAVEYARD 2009 SIDE SCAN SURVEY

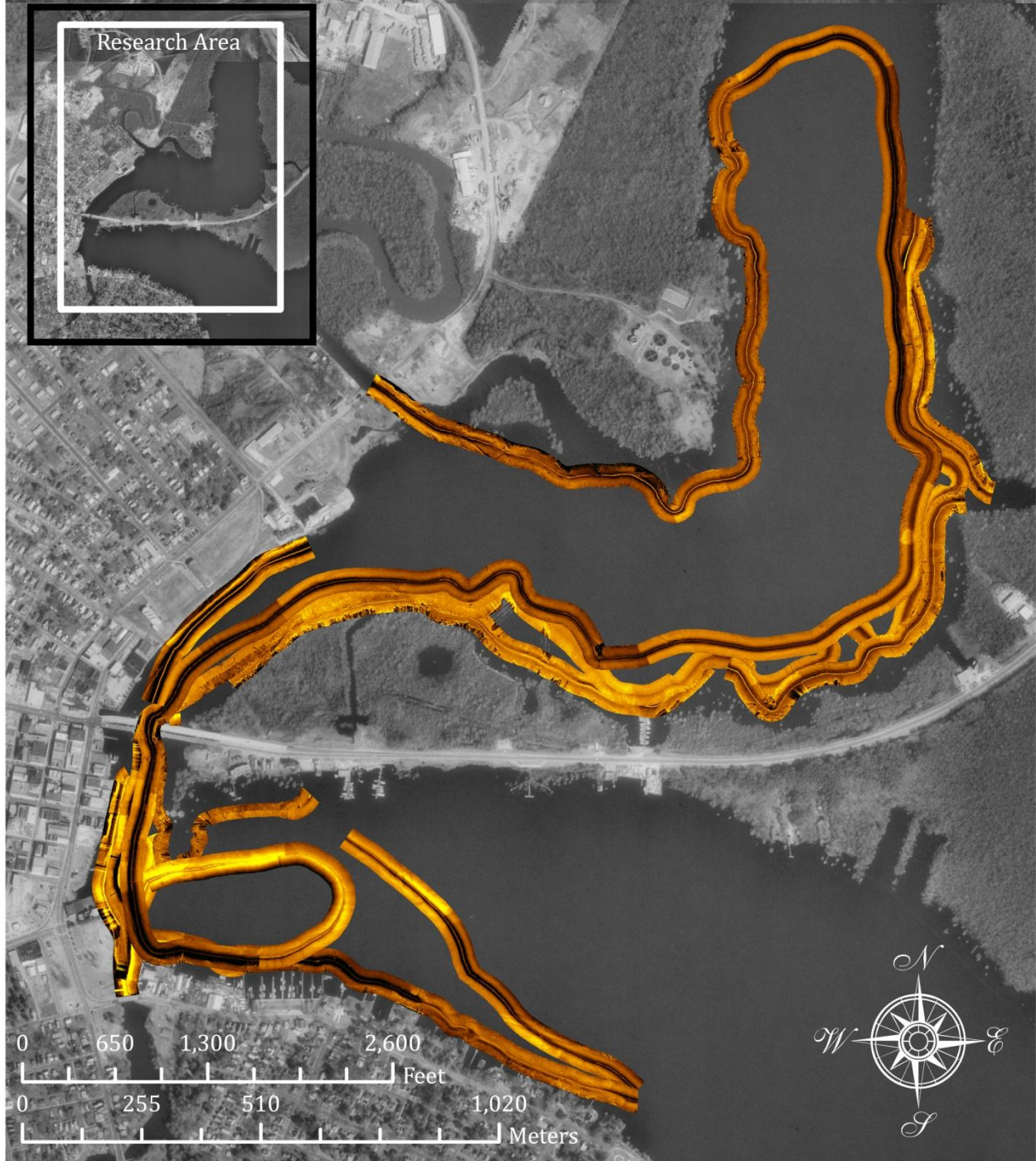


FIGURE 3.3. June 2009 Side Scan coverage in the Pasquotank River at Elizabeth City (Map by author 2010).

Supplementary fieldwork sessions comprised the fourth and final phase of archaeological fieldwork. Fieldwork included investigation of additional abandonment sites identified in historic cartographic sources, during the January 2009 reconnaissance, and located during the June 2009 remote sensing. Student volunteers accompanied the author into the field on a number of field days throughout the end of August and September 2009 to complete brief site reports, photo documentation, and position fixing with GPS on all abandoned vessels in the target area.

There were several factors limiting a comprehensive record of the Elizabeth City Ships' Graveyard. All vessels are partially submerged, and the majority of them are entirely inundated. Additionally, water clarity in the Pasquotank River at Elizabeth City averaged less than one foot. Limited accessibility and low visibility, coupled with the large number of targets, influenced the degree of detail recorded. Targets inaccessible by researchers free diving were not recorded, including targets in the main boating channel and in water exceeding approximately six feet. Some targets were also excluded from individual investigation because the side scan image was sufficient to identify the cultural material and provided GPS coordinates for position fixing, this mainly applied to the marine railways.

Graveyard Overview

Producing an accurate map of the abandonment complex was the primary goal in order to delineate the graveyard, identify spatial patterning, and pinpoint locations of submerged vessels. Two site maps and additional site descriptions from earlier investigations were helpful references but initial reconnaissance, and later remote sensing, revealed the necessity of an updated map to understand accurately the entire abandonment complex.

Previous Site Plans

State underwater archaeologists Richard Lawrence and Mark Wilde-Ramsing of the North Carolina Underwater Archaeology Branch produced a site plan during the 5 September 1985 investigation (Figure 3.4) (Wilde-Ramsing 1985:3). Gordon P. Watts Jr. of Tidewater Atlantic Research Group worked two independent contract projects in October 1985 and 22-24 April 1990 that resulted in one site plan (Figure 3.5) and one site description (Watts 1986:7).

The initial fieldwork in March 2009 utilized these previous projects' results to approximate the locations of the charted vessels PQR001 through PQR0023 and P-01 through P-05. Recoding teams were able to more easily locate their assigned vessels and compare the archaeological data with the physical remains of each vessel as it appears today. Following prolonged time in the field, it became evident that there were visible changes in vessel remains in the 24 years since the original fieldwork was completed, as well as omissions of additional vessels in the archaeological record.

Updated Site Plan

The previous site plans and descriptions were useful for researchers' initial familiarization with the sites. Prior site plans also maintain a comparative value for evaluating site degradation over the past 25 years. However, creating an updated site map of the abandonment complex was necessary to obtain the most complete and accurate understanding of the graveyard. The new site plan includes GPS position fixing technology that creates a more precise location than was possible in the mid-1980s.

GPS coordinates were collected from a variety of sources. Students of the Research Methods Class took GPS coordinates during the March 2009 field days and the author and volunteers gathered GPS on newly acquired sites during subsequent fieldwork. Additional



FIGURE 3.4. UAB September 1985 investigation Site Map (Lawrence and Wilde-Ramsing 1985:3).

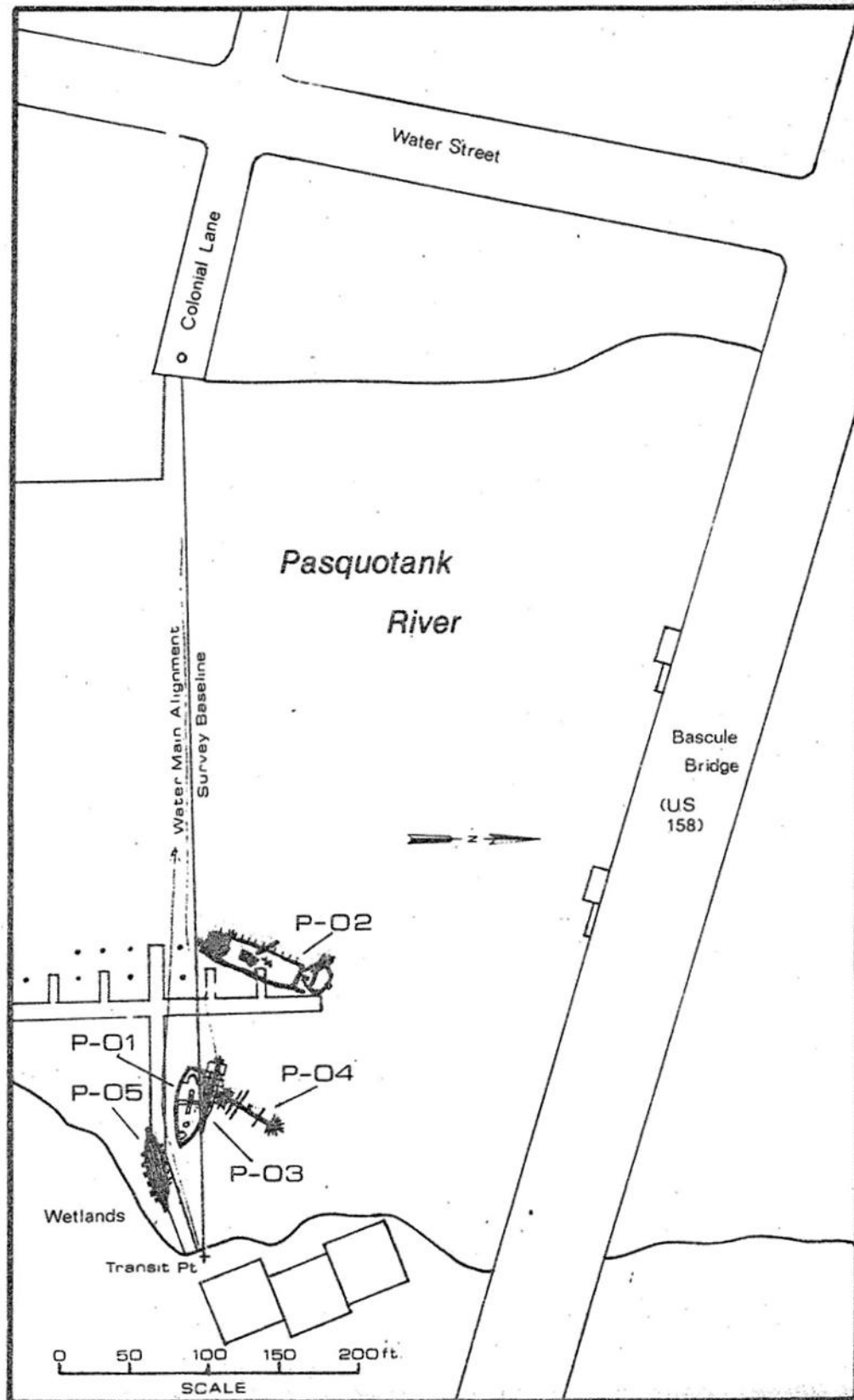


FIGURE 3.5. Tidewater Atlantic Research Group October 1985 site map (Watts 1986:11).

GPS information was collected from the remote sensing data for any vessels not investigated on an individual basis. Researchers measured coordinates in UTM in the 18S quadrant using datum WGS 1984. Although accuracy varied on a vessel-to-vessel basis, the GPS points are on average accurate to within 15 feet.

The main purpose of GPS points and compass bearings on each vessel was to obtain enough detail to provide vessels directionality when the data was entered into the Elizabeth City *ESRI ArcGIS* project that produced the final site plan. Inaccessible vessels and maritime associated material, such as marine railways, were also identified by the GPS coordinates generated from the remote sensing data. *ArcGIS* allowed the author to geo-rectify the 1935 Army Corps Map to the proper orientation and scale and incorporate the 28 historic vessels in the modern graveyard site plan. The entire abandonment complex, both historic vessels and vessels currently in the archaeological record, is represented in the updated site plan (See Chapter Four). This updated site plan provides researchers with a better picture of the extent of the graveyard and highlights spatial patterns throughout the complex.

Site Inspections

Another aim of the fieldwork was to conduct site inspections on a number of the vessels to obtain diagnostic information such as construction or vessel type, abandonment signature, and evidence of salvage. Researchers inspected individual sites during the second and fourth phases of fieldwork.

Dr. Nathan Richards' field methods students performed the first site inspections in March 2009. Students were responsible for documenting and writing a site report for their designated vessel as a requirement of the field methods class. Sites were assigned as follows: 0002PQR (Caudell 2009), 0003PQR (Smeeks 2009), 0004PQR (Wittig 2009), 0005PQR (Jones 2009),

0007PQR (Dilk 2009), 0008PQR (Mims 2009), 0010PQR (Gandulla 2009), 011PQR (Ratcliffe 2009), 0012PQR (Schnitzer 2009), 0014PQR (Minford 2009), 0015PQR (Siegel 2009), 0016PQR (Rissel 2009), 0062PQR (Lengieza), and 0021PQR-0026PQR (Petrey 2009). Students, working in pairs, conducted individual site investigations that included observing environmental conditions and vessel deterioration, taking detailed measurements to complete a scaled drawing of each vessel, photographic documentation, and obtaining GPS coordinates.

The author and student volunteers completed subsequent individual site inspections throughout August and September 2009 following remote sensing analysis. Researchers investigated 40 of the 64 identified targets. The teams did not investigate targets in the main channel or in areas where they would interfere with active maritime businesses. A number of side scan targets corresponded with previously investigated sites, 0001PQR, 0006PQR, 0009PQR, 017PQR, 0018PQR, and 0019PQR, while other targets represented vessels previously undocumented and requiring state designation numbers.

Researchers, working in teams of two, utilized canoes to access the individual sites identified by remote sensing. Teams investigated targets based on location, accessibility, and maritime significance as determined by the assigned classification during post remote sensing analysis. Category 1 targets were given priority, but teams worked in a methodical manner and investigated all targets in a single area before moving on. A site proforma, after Seeb (2008) originally adapted from Richards (2002), outlined diagnostic features and standardized data collection (Figure 3.6).

In addition to investigating known targets, teams conducted visual surveys by canoe filling in areas inaccessible by boat during remote sensing. Teams investigated and documented new acquisitions in the same manner as known targets. All previously undocumented vessels

ELIZABETH CITY SHIPS' GRAVEYARD				VESSEL NUM:		PQR	
NAME(S):				DATE:			
				TIME:			
POSITION:				- E			
				- N			
SITE DESC:	DRY		SUBMERGED		INUNDATED		
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:		
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:		
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:		
ENGINE TYPE:	STEAM		GASOLINE		DIESEL		UNKNOWN
BOILERS:	SQUARE		CIRCULAR		NONE		
STERN DESC:							
BOW DESC:							
DIMENSIONS:			: LENGTH			: BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH		SIDED		MOULDED
EXT. STRAKES:			: PORT	: STBD			
FRAMES #:			: PORT	: STBD			
INT. CEILINGS:			: PORT	: STBD			
STANCHION:				: NUM			
BULKHEAD:				: NUM			
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION		
	Desc:		Desc:		Desc:		
ADDITIONAL OBSERVATIONS:							

FIGURE 3.6. Researchers completed a standardized form out for every site inspection (Proforma by author).

were assigned state designation PQR numbers beginning with 0051PQR. Appendix A contains the complete database of proforma from the fieldwork carried out in Elizabeth City during March and August 2009.

Descriptions and Identifications

Site descriptions included basic construction features and material, scantling measurements, vessel type, propulsion, and presence of engines or machinery. Identifying individual barges in the historic record is difficult as they are rarely registered, insured, or named. The data collected can however assist the author in identifying vessel typology and approximate dates for the vessel's usage life. This information helped narrow the range of years the graveyard was actively increasing.

Site Formation

Fieldwork also focused on determining the signatures of site formation processes within the graveyard and the driving forces behind them. The proforma, specifically tailored to this project, provided an opportunity to record both n-transform and c-transform information. Researchers focused on observing environmental conditions, such as degree of inundation and distance from shore, and reductive abandonment signatures such as burning, hull modifications, or salvage activity. These observations are useful to define individual vessels' site formation as well as contributing to the formation processes seen across the entire graveyard.

Vessels themselves are not the only features that interested researchers. Teams noted adjacent maritime features, such as pilings, wharves, and docks because they can relate information about past cultural interactions with the maritime environment. For example, pilings adjacent to an abandonment may indicate deliberate vessel placement to ensure permanent

positioning. The presence of large amounts of rocks and rubble within a vessel represents an additional placement assurance technique.

Individual site analysis identified isolated behaviors, that when analyzed across the entire complex revealed abandonment behaviors patterns reflected in the use, modification, deposition, salvage, and reuse of the watercraft. Comparing these patterns with abandonment complexes documented in other areas, both locally and worldwide, presents the opportunity to reveal distinctive or cross-cultural behaviors. Equally important was what the social, economic, and technological behavior patterns reflected in the abandonment complex revealed about the historic culture of Elizabeth City. Additionally, the sites were analyzed to determine the temporal development of the graveyard based on deposition ranges for each vessel. The author applied Annales-based principals to the abandonment complex to illuminate the development of Elizabeth City's maritime culture throughout history.

Photographic Documentation

Photographic documentation was a third goal of the Elizabeth City fieldwork. The vessels that populate the ships' graveyard were photographed on multiple occasions. During the March 2009 field methods class, students took photographs of assigned vessels with various personal waterproof cameras and a 5.1 Megapixel Sony Cybershot from the Program in Maritime Studies (PMS). Researchers took additional photographs with a Nikon D-60 DSLR camera on subsequent recording days throughout the fall of 2009.

Photographs documentation had a number of goals. The photographs recorded larger clusters of vessels, whole vessels, individual construction details and abandonment behaviors that, when put together, create a complete photographic record of the Elizabeth City Ships'

Graveyard. Documenting the methodologies utilized by researchers was another equally important goal of photography.

Site Plans

Students of Dr. Richards' HIST6820 field methods class produced individual site plans consisting of a scaled drawing of their assigned site. Teams approached recording with similar methodologies, establishing a baseline along the length of the vessel either inside or outside the hull in order to take baseline-offset measurements. Students also recorded detailed measurements of interior structures and associated material remains such as steering quadrants and machinery located in and around the vessels. The goal of this documentation was to produce an accurate scaled representation of the current remains of each abandoned vessel. The site maps provide a visual representation of abandonment signatures and behaviors at work on each vessel.

Analysis

Analysis of the Elizabeth City Ships' Graveyard relied upon the amalgamation of historical sources and archaeological research and results to answer the questions posed in the research questions. The correlated historical and archaeological data entered in the Elizabeth City Ships' Graveyard *ArcGIS* Project provided the means to analyze spatial and temporal patterns in the complex. Statistical analysis was also important for identifying relationships between cultural conditions during the *conjoncture* with the individual *historic événements* and the graveyard's overall development.

Geospatial Analysis

ArcGIS 9.1, GIS software, was an effective tool for analysis allowing vessel locations to be geo-rectified on a map to provide a precise representation of the graveyard. *ArcGIS* is a collection of computer programs that allow users to manipulate and analyze raw data in a

visually organized manner. This program allows researchers to analyze spatial patterns and geographic data, a tool useful to understand the abandonment complex at Elizabeth City. The author entered vessel GPS coordinates into the Elizabeth City Ships' Graveyard GIS project to create the updated site plan of the entire abandonment complex. Vessel dimensions and orientation were also added to the project allowing the specific vessel size, location, and direction to be projected onto the updated site plan. The 1935 Army Corps map, Lemuel S. Blades III's 1946-1947 unmeasured sketch, and historical research allowed previous historic ship abandonments to be geo-rectified into the appropriate location within the updated site map as well. The combination of extant material remains with historical data produced the most complete representation of the Elizabeth City Ships' Graveyard to date.

Additional data analysis was completed once the GIS database was created for the abandonment complex. The primary goal of data analysis was to organize this wide-ranging body of information and utilize it as the foundation on which the theoretical analysis could take place. The author integrated primary source documents, archaeological data, spatial analysis from GIS, as well as individual site data to form a cohesive picture of the different temporal phases of the Elizabeth City Ships' Graveyard. The ability to manipulate the 104 archaeologically significant sites in the Elizabeth City abandonment complex revealed a comprehensive timeline of abandonment events. Five temporal depositional phases were identified from the analysis illuminating the site formation and abandonment processes acting on the graveyard as a whole entity.

Statistical Analysis

Statistical analysis, an important determinative tool utilized in this investigation, was completed following the creation of the GIS database. The statistical analysis was completed

based on the precedent set by previous researchers in the field such as Sami Seeb (2007). Economic, cultural, and technological variables such as manufactured product value, vehicle registration, railroad track expansion, and population were organized into graphs and analyzed for the period directly influencing the creation of the ships' graveyard, the main *conjoncture*. The statistical analysis performed established links between the cultural circumstances that initiated the abandonment behavior and the elements of that culture that reflected in the individual vessels and across the entire complex.

Conclusion

Completing fieldwork created a supplementary dataset to challenge and re-evaluate the historical research and allowed the author to conduct a comprehensive analysis of the Elizabeth City Ships' Graveyard. The abandonment complex was an untapped resource reflecting Elizabeth City's historic economy, society, and technology that when studied, revealed new aspects of the city's interaction with the maritime environment. Integrating the data gained from the archaeological fieldwork with historic documentation supplied the means to understand Elizabeth City's maritime culture on the three levels of Braudel's historical model, the *longue durée*, *conjonctures*, and *historic événements*. Chapter Four will present the combined archaeological and historical research in the form of individual life-cycles. These vessel profiles are the framework on which the Annales-based theoretical principles will be applied in subsequent chapters.

CHAPTER 4: INDIVIDUAL SITES

Introduction

Archaeological and historical research has identified 101 vessels and 3 maritime related sites in the Elizabeth City Ships' Graveyard (Figure 4.1). Table 4.1 represents the abandonment complex in its entirety, organized numerically by official UAB site numbers. A number of vessels in the archaeological and historic records correlate and will be addressed on an individual basis in this chapter. Table 4.1 includes additional identification information and perceived systemic function for each vessel, as well as its depositional range and the sources used to determine that range. Deposition ranges were not created for the three marine railways. Table 4.1 is the culmination of the correlated archaeological and historical data for each site presented in this chapter. Due to the size of the dataset, the author arbitrarily divided the complex into eight groups according to the spatial concentrations of vessels (Figure 4.2). This created manageable subsets and provided structure for this chapter.

Correlating the historical documentation, previous archaeological work, and recent archaeological fieldwork data for each vessel is important because it begins to reveal both the systemic function and abandonment history of the vessels that comprise the Elizabeth City Ships' Graveyard. As previously discussed, the historical documentation of abandoned work vessels is somewhat scarce. Correspondingly, the level of detail available for each vessel varies throughout the abandonment complex.

Evaluating the use and depositional factors as they relate to the individual vessels is another focus of this chapter. Richards (2008:287) posits that use and modification processes directly influence discard processes and "can be seen to influence the time and nature of the transformation process from systemic context to an archaeological context." Based on the



FIGURE 4.1. Updated site plan of the Elizabeth City Ships' Graveyard (Map by author 2010). Vessel dimensions are exaggerated.

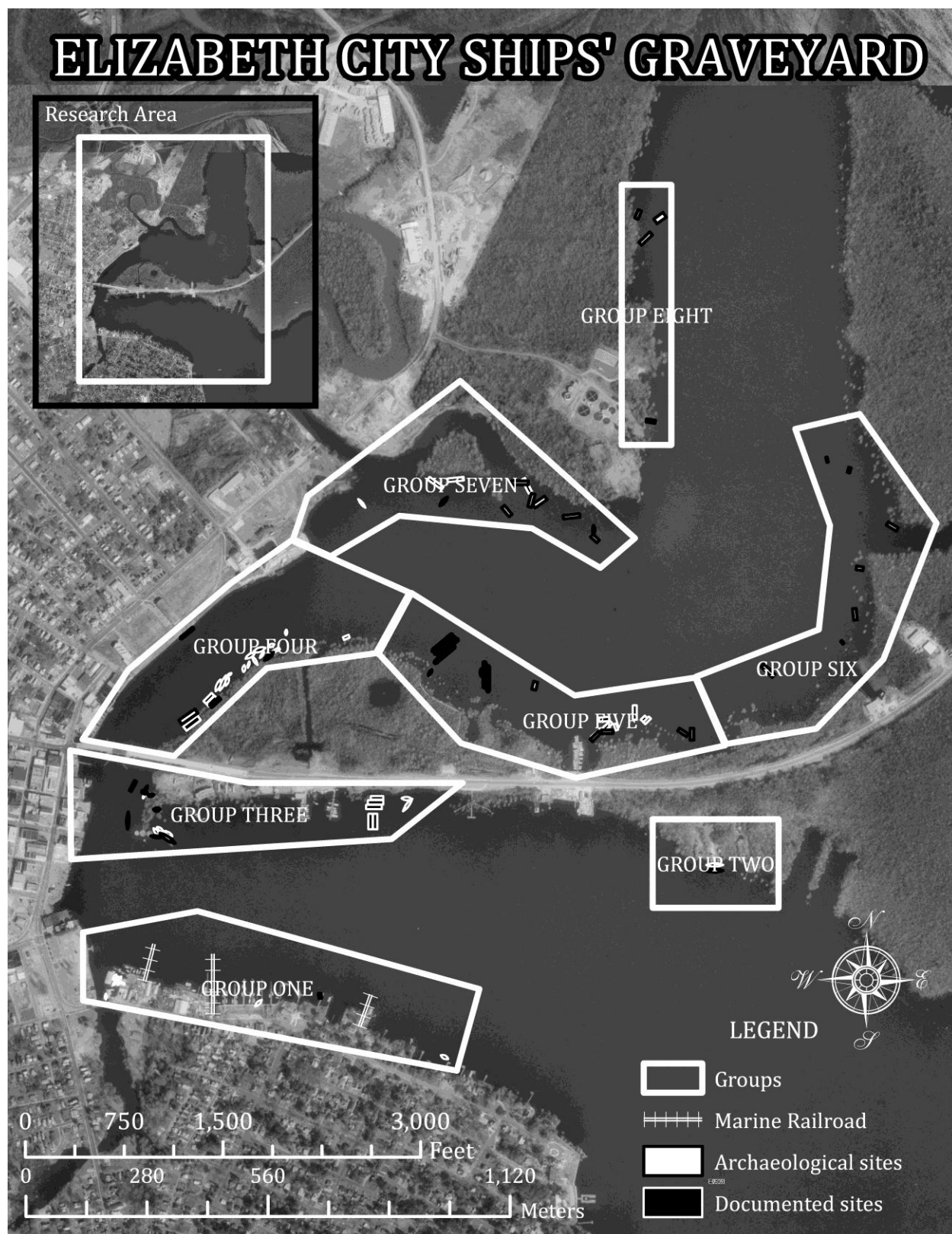
Official UAB Site Number	Assigned Name	Additional Identification And Perceived Systemic Function	Deposition Ranges		DSC Lock Size	1935 Map	1946-47 Map	Photographs	1985 UAB Survey	1985 Watts Survey	1990 Watts Survey	2004 UAB Survey	Interviews	Side Scan
0001PQR	Thompson Wreck	Old Metal Barge, 1050PQR	1899	1947	X		X						X	
0002PQR	E.C. Canal Barge #1	Bay Barge	1950	1960	X		X	X					X	
0003PQR	E.C. Canal Barge #2	Bay Barge	1950	1960	X		X	X					X	
0004PQR	E.C. Canal Barge #3	Bay Barge	1950	1960	X		X	X					X	
0005PQR	E.C. Canal Barge #4	Bay Barge	1950	1960	X		X	X					X	
0006PQR	E.C. Launch	Launch	1935	1985		X			X					
0007PQR	E.C. Canal Barge #5	Bay Barge	1950	1960	X		X	X					X	
0008PQR	E.C. Canal Barge #6	Bay Barge	1950	1960	X		X	X					X	
0009PQR	E.C. Marina Wreck	Barge	1935	1985		X			X					
0010PQR	E.C. Square Barge #1	Barge	1899	1935	X	X			X					
0011PQR	E.C. Square Barge #2	Barge	1899	1935	X	X			X					
0012PQR	E.C. Square Barge #3	Barge	1899	1935	X	X			X					
0013PQR	E.C. Square Barge #4	Hopper Barge	1899	1935	X	X			X					
0014PQR	E.C. Square Barge #5	Barge	1935	1985	X	X			X					
0015PQR	E.C. Square Barge #6	Barge	1935	1985		X			X					
0016PQR	E.C. Square Barge #7	Barge	1935	1985		X			X					
0017PQR	E.C. Square Barge #8	Hopper Barge	1935	1985		X			X					
0018PQR	E.C. Square Barge #9	Barge	1935	1985		X			X					
0019PQR	E.C. Square Barge #10	Barge	1935	1985		X			X					
0021PQR	<i>Ruth</i>	Deadrise Workboat	1947	1979				X	X		X			
0022PQR	NC 2667 T	Deadrise Workboat	1947	1979				X	X		X			
0023PQR	Cyprus Tree Wreck	Skipjack or Bateau	1935	1947		X	X	X	X	X				
0024PQR	E.C. Powerboat #1	Deadrise Motorized Workboat	1935	1947				X		X				
0025PQR	E.C. Powerboat #2	Deadrise Motorized Workboat	1935	1947				X		X				
0026PQR	E.C. Centerboard Wreck	Bugeye or Brogan	1947	1950				X		X				
0027PQR	E.C. Canal Barge #7	Steam-driven Snag Barge	1935	1985	X					X				X
0028PQR	Bible College Canal Barge	Decked Canal Barge	1935	1985		X						X		
0030PQR	Vessel "B"	aka 0022PQR	1947	1979				X	X		X			

Official UAB Site Number	Assigned Name	Additional Identification And Perceived Systemic Function	Deposition Ranges		DSC Lock Size	1935 Map	1946-47 Map	Photographs	1985 UAB Survey	1985 Watts Survey	1990 Watts Survey	2004 UAB Survey	Interviews	Side Scan
0031PQR	Vessel "C"	aka 1038, 1037 or 1008PQR	1899	1935		X					X			
0032PQR	Vessel "D"	aka 1038, 1037 or 1008PQR	1899	1935		X					X			
0051PQR	Chine Built Boat	Chine Barge, aka 1016PQR	1935	1947		X	X	X						
0052PQR	Small Ferrous Boat	aka 1046PQR or 1047PQR	1899	1985										
0053PQR	Fishing Boat in Tree	Deadrise Workboat	1985	1993				X	X					
0054PQR	Sailing Ship	Ship	1935	1947		X								X
0055PQR	E.C. West Bank Barge #1	Barge	1935	1985		X			X					
0056PQR	E.C. West Bank Barge #2	Barge, aka 1043PQR	1905	1935		X			X					
0057PQR	E.C. West Bank Barge #3	Barge	1899	1935	X	X								
0058PQR	E.C. West Bank Barge #4	Barge	1935	1985		X			X					
0059PQR	E.C. West Bank Barge #5	Barge	1935	1985		X			X					
0060PQR	E.C. West Bank Ship	Ship	1935	1985		X			X					X
0061PQR	E.C. West Bank Barge #6	Barge	1935	1985		X			X					X
0062PQR	Sewage Plant Site	Flat or Barge	1935	1985		X								
0063PQR	Side Scan Target 119	Barge	1935	1985		X								
0064PQR	Side Scan Target 043	Barge	1935	1985		X								
0065PQR	Side Scan Target 041	Barge	1935	1985		X								
0066PQR	Side Scan Target 157	Barge	1935	1985		X								
0067PQR	Side Scan Target 102	Ship	1935	1985		X								
0068PQR	Marine Railway	Marine Railway	N/A	N/A	-	-	-	-	-	-	-	-	-	-
0069PQR	Marine Railway	Marine Railway	N/A	N/A	-	-	-	-	-	-	-	-	-	-
0070PQR	Pier Barge/Target 110	Barge	1935	1950		X		X						X
0071PQR	Marine Railway	Marine Railway	N/A	N/A	-	-	-	-	-	-	-	-	-	-
0072PQR	Side Scan Target 0019	aka 1052PQR and 1044PQR	1917	1935		X	X	X						X
1001PQR	<i>Thomas J. Shryock</i>	Chesapeake Ram	1940	1940		X	X	X					X	
1002PQR	Unknown Schooner	Schooner	1935	1940		X	X	X					X	
1003PQR	Oyster Barge 1	Barge	1935	1944		X	X	X					X	
1004PQR	Oyster Barge 2	Barge	1935	1944		X	X	X					X	

Official UAB Site Number	Assigned Name	Additional Identification And Perceived Systemic Function	Deposition Ranges		DSC Lock Size	1935 Map	1946-47 Map	Photographs	1985 UAB Survey	1985 Watts Survey	1990 Watts Survey	2004 UAB Survey	Interviews	Side Scan
1005PQR	Oyster Barge 3	Barge	1935	1944		X	X	X					X	
1006PQR	Oyster Barge 4	Barge	1935	1944		X	X	X					X	
1007PQR	Lumber Barge	Barge	1935	1939		X	X	X					X	
1008PQR	Texaco Tank Vessel #3	Ship	1899	1935	X	X					X			
1009PQR	<i>Clarence A. Holland</i>	Chesapeake Ram	1944	1944		X	X	X						X
1010PQR	<i>O.T. & Lloyd Jr.</i>	Fishing Boat	1947	1948			X	X					X	
1011PQR	<i>Texaco 144</i>	Oil Tanker	1945	1946			X	X					X	
1012PQR	<i>Lucille Ross</i>	Tugboat	1947	1948			X	X					X	
1013PQR	<i>Chelsea</i>	Ship	1944	1945			X	X					X	
1014PQR	Fantail Stern Vessel	Ship, aka 1046 or 1047PQR	1919	1921		X	X	X					X	
1015PQR	Little Barge #1	Barge	1935	1947			X	X					X	
1016PQR	Little Barge #2	Chine Barge, aka 0051PQR	1935	1947			X	X					X	
1017PQR	Unidentified Barge	Barge	1947	1954			X	X					X	
1018PQR	Old Barge	Barge	1935	1947			X	X					X	
1019PQR	Perpendicular Boat	aka 0023PQR	1935	1947		X	X	X					X	
1020PQR	45 Degree Boat	aka 0024PQR or 0025PQR	1935	1947		X	X	X					X	
1021PQR	½ Boat	aka 0024PQR or 0025PQR	1935	1947		X	X	X					X	
1022PQR	Glover's Cut Barge #1	aka 0010PQR	1899	1935	X	X								
1023PQR	Glover's Cut Barge #2	aka 0011PQR	1899	1935	X	X								
1024PQR	Glover's Cut Barge #3	Barge	1899	1935	X	X								
1025PQR	Reed Island Barge #1	Barge	1899	1935	X	X								
1026PQR	Reed Island Barge #2	Barge	1899	1935	X	X								
1027PQR	Knobb's Creek Vessel	Ship	1899	1935		X								
1028PQR	Shipyard Vessel #1	Ship	1899	1935		X		X						
1029PQR	Shipyard Vessel #2	Ship	1899	1935		X		X						
1030PQR	Shipyard Vessel #3	Ship	1899	1935		X		X						
1031PQR	Shipyard Vessel #4	Ship	1899	1935		X		X						
1032PQR	Shipyard Vessel #5	Ship	1899	1935		X		X						

Official UAB Site Number	Assigned Name	Additional Identification And Perceived Systemic Function	Deposition Ranges		DSC Lock Size	1935 Map	1946-47 Map	Photographs	1985 UAB Survey	1985 Watts Survey	1990 Watts Survey	2004 UAB Survey	Interviews	Side Scan
1033PQR	Shipyard Vessel #6	Ship	1899	1935		X		X						
1034PQR	Shipyard Vessel #7	Ship	1899	1935		X		X						
1035PQR	Shipyard Vessel #8	Ship	1899	1935		X		X						
1036PQR	Shipyard Vessel #9	Ship	1899	1935		X		X						
1037PQR	Texaco Tank #1	Ship	1899	1935	X	X					X			
1038PQR	Texaco Tank #2	Ship	1899	1935	X	X					X			
1039PQR	Glover's Cut Barge #4	Barge	1899	1935	X	X								
1040PQR	Glover's Cut Barge #5	Barge	1899	1935	X	X								
1041PQR	Glover's Cut Barge #6	aka 0012PQR	1899	1935	X	X								
1042PQR	Glover's Cut Barge #7	aka 0013PQR	1899	1935	X	X								
1043PQR	Reed Island Barge #3	aka 0056PQR	1905	1935	X	X								
1044PQR	West Machelhe Island #1	aka 0072PQR and 1052PQR	1917	1935		X	X	X					X	X
1045PQR	West Machelhe Island #2	Ship	1899	1935		X								
1046PQR	West Machelhe Island #3	Ship, 0052PQR or 1014PQR	1899	1935		X								
1047PQR	West Machelhe Island #4	Ship, 0052PQR or 1014PQR	1899	1935		X								
1048PQR	West Machelhe Island #5	Ship	1899	1935		X								
1049PQR	West Machelhe Island #6	Ship	1899	1935		X								
1050PQR	Old Metal Barge	Thompson's Wreck, 0001PQR	1899	1947		X	X		X					
1051PQR	Unknown Vessel	Ship	1935	1947			X	X					X	
1052PQR	Cement barge	aka 0072PQR and 1044PQR	1917	1935		X	X	X					X	X

TABLE 4.1. The Elizabeth City Ships' Graveyard dataset of 104 culturally significant sites (Chart by author 2010). Arrangement is by official UAB numbers both previously established by state archaeologists and assigned by the author. Deposition ranges and their justification sources are included, as well as additional identification information and perceived systemic function. A number of vessels in the historic and archaeological record correlate and will be addressed individually within this chapter.



precedence set by Richards, the vessels in this abandonment complex will be evaluated for use, modification, and reuse processes with the intention of determining correlations between their systemic uses and deposition into the archaeological context. Additionally, this chapter will identify post-depositional processes, such as salvage, scavenging, and conservation. These additive and reductive processes contribute to understanding the human depositional behaviors and the motivation behind those behaviors. The vessel life-cycles provided in this chapter will be referenced throughout the remainder of this thesis.

Group One

The first group is located along the west bank of the Pasquotank River below the city's waterfront in what was historically Elizabeth City's active shipyard industry (Figure 4.3). This area of Elizabeth City has changed from strictly commercial use in the past to allow increased residential function over the past fifty years, yet it retains vestiges of its original use. The Elizabeth City Shipyard still operates in the area from Charles Creek extending east approximately 450 yards with remnants of the original size of the shipyard up to 700 yards downriver. Group One is comprised of 13 significant maritime sites: 9 historic vessels, 3 marine railways, and 1 vessel in the archaeological record.

Researchers first observed sites 0068PQR, 0069PQR, and 0071PQR during the visual survey that took place in January 2009. The beginnings of the three marine railways were visible on land, but the extent of each was unknown until the remote sensing data from June 2009 was processed. These marine railways were integral to the shipbuilding industry that thrived in this area of Elizabeth City throughout the end of the 19th century and first quarter of the 20th century. Sites 0068PQR and 0071PQR correspond with the location of two of the four marine railways owned by the H. Wiley Shipyard, and 0069PQR corresponds with the marine railway operated



FIGURE 4.3. Group One located on the west bank of the Pasquotank River just southeast of the city's downtown waterfront (Map by author 2010). The nine historic vessels, three marine railways, and one vessel remaining in the river are differentiated by color as indicated in the legend.

by the Elizabeth City Iron Works and Supply Company (Sanborn Map and Publishing Co. Limited (SMPL) 1931; U.S. Army Corps of Engineers 1935).

The Elizabeth City Iron Works and Supply Company was established in this location in 1914 through the merger of T. B. Hayman and E. S. Willey shipyards. From this parent company, the Elizabeth City Shipyard became one of the three main divisions active from 1914 until the end of WWII (Colton 2009:1). The shipyard is currently a marina, with plans to develop the land for condominiums in the near future, however, at least one of the railways is still in use as the author witnessed a barge being hauled out of the river via railway 0069PQR during one of the field sessions in August 2009.

Site 0070PQR was discovered during the remote sensing data analysis. Site 0070PQR appears to be a barge on the bottom of the river with pilings piercing the hull. This site was inaccessible to researchers inspecting individual sites due to its depth and location under a private dock. As previously mentioned in the methodology in Chapter Four, the decision to not utilize SCUBA was determined by budgetary restrictions due to the large number of vessels and limited time to complete the fieldwork.

The side scan image provides data to determine rough dimensions of vessel 0070PQR (Figure 4.4). The length and width are estimated at 38.1 ft. (11.6 m) and 8.7 ft. (5.7 m) respectively, with a depth of hold estimated at 0.7 ft. (0.2 m). Site 0070PQR represents a fairly small flat or barge with square ends, though it is unclear if they were straight or angled ends, and what was most probably a shallow draft. Without more information, either historically or archaeologically, the identification of this vessel remains unknown. However, the site's formation processes can be hypothesized despite a positive identification. Four different possible site formation scenarios would result in this vessel's current position. The first hypothesis is that

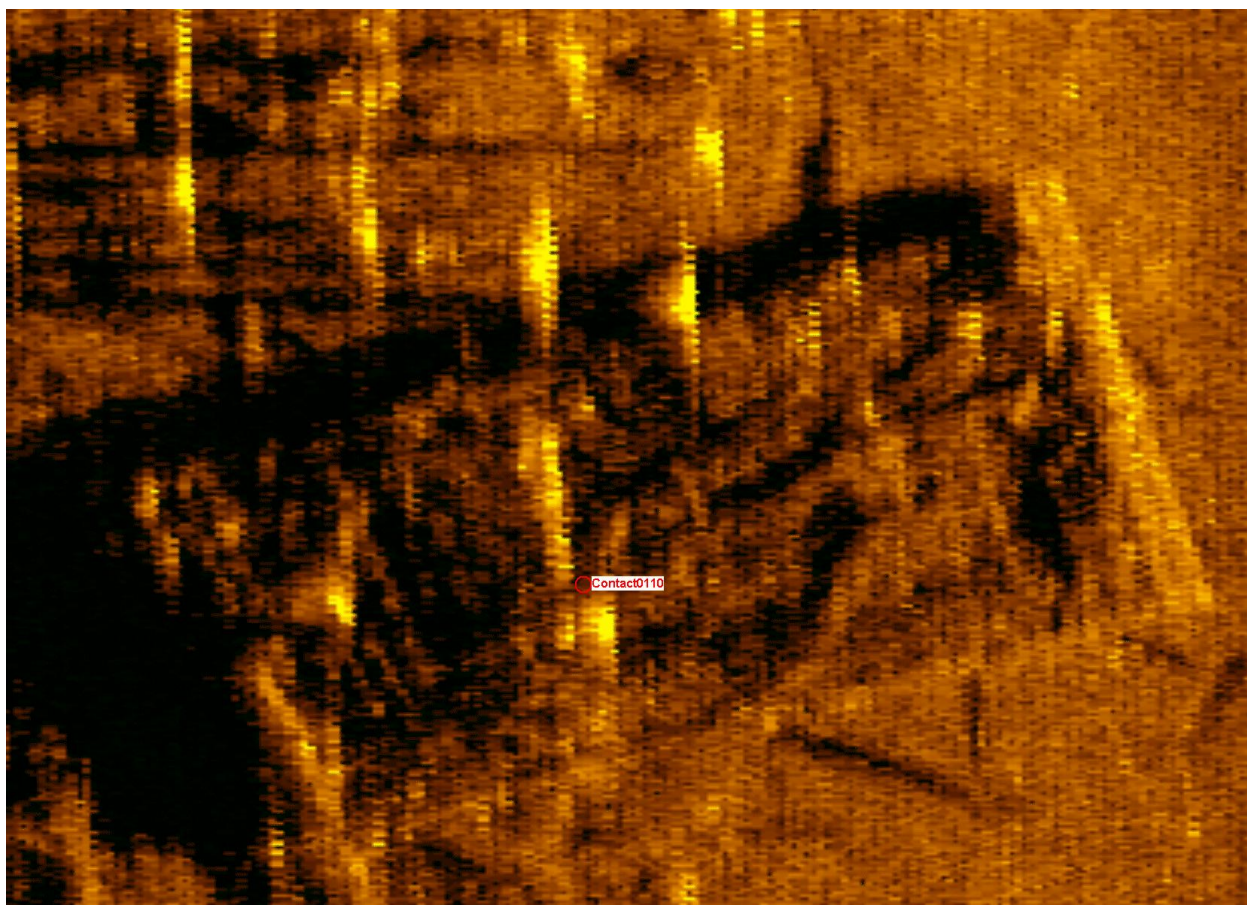


FIGURE 4.4. Site 0070PQR side scan sonar image (Richards and Smith 2009:41).

the pilings were placed without knowledge of the submerged vessel. The second hypothesis is that the pilings were placed with knowledge of the submerged vessel but without the intent to keep the vessel in place. The third hypothesis is that the pilings were placed with knowledge of the submerged vessel and with the intention to keep the vessel in place. Finally, the fourth hypothesis is that the vessel was intentionally submerged to function as cribbing for the pilings.

Figure 4.4 demonstrates the presence of n-transformations on site 0070PQR. Submersion in an acidic aqueous environment results in the deterioration of both the wood that the vessel is constructed of and the ferrous fastenings likely used to construct the vessel (N.C. Division of Water Quality 2002:25). All four hypotheses involve c-transformations on the vessel, but differ in the degree of intentional human interaction with the vessel. Hypothesis one is the only

scenario where there was no intention to disrupt the archaeological context, while on the other end of the spectrum, hypothesis four represents both Richards' *deliberate abandonment* and Schiffer's *reuse* in the systemic context. Hypotheses two and three are scenarios where human cultural transformations acted on the vessel already in the archaeological context, both of which may have been driven by economic factors. In hypothesis two, the cost of removing or relocating the vessel may have been determined to be too great, thus the pilings were placed regardless of the submerged material culture. In hypothesis three, the submerged vessel may have been seen as an acceptable substitute for planned cribbing material and driving pilings through the hull represented an economic savings. Regardless of the intent, the pilings driven through the hull of vessel 0070PQR provided placement assurance on the bottom of the river and changed the vessel's site formation processes with the addition of a c-transformation.

Group One also contains a concentration of abandoned vessels known only through historic documentation. The U.S. Army Corps of Engineers created a map for the War Department in July 1935 depicting the Pasquotank River at Elizabeth City. This map was instrumental in discovering a number of historic abandonments that belong to an early phase of the graveyard. Nine wrecks on the 1935 map are located in Group One and are represented in Figure 4.3 as vessels 1028PQR-1036PQR. A cluster of seven vessels is located where Charles Creek meets the Pasquotank River, and two other wrecks are scattered throughout the waterfront.

The remote sensing data from June 2009 revealed no identifiable submerged archaeological remains in these areas, and the visual survey in January 2009 did not identify any remnants of vessels above water. Both of these surveys' accuracy were hampered by the number of extant pilings in the water which may have obscured any remaining cultural material. Currently, the area at the mouth of Charles Creek displays evidence of expansion in the form of

additional docks and marina structures not present in the 1935 map or an aerial photograph from 1950 (Figure 4.5). If the vessels were still in the archaeological record they would be beneath these additional dock and pier structures. Observing the condition of the unknown vessel in the 1954 photograph (Figure 4.6), it is possible that over the years the vessels slipped below the water and were used as cribbing for the marina structures currently in that location.



FIGURE 4.5. Photographs from 1954 highlighting the area where seven abandonments were located just south of the entrance to Charles Creek, this area is now filled with new dock and pier structures (Lemuel S. Blades III Collection, annotations by author).



FIGURE 4.6. Photograph from 1954 of one of the derelict vessels in the abandonment cluster at the mouth of Charles Creek (Lemuel S. Blades III Collection, annotations by author).

The 1935 map confirms a *terminus ante quem* for these vessels' deposition into the river, but it is uncertain how early they were deposited there. It is likely that the seven vessels near Charles Creek were deposited following the shipyard merger in 1914 (Figure 4.3). For the cluster of seven vessels at the mouth of Charles Creek, the docks newly vacated by the shipyard merger provided placement assurance and kept the vessels close by for owners to access post-deposition. Abandoning nine vessels in and around the active Elizabeth City Iron Works and Supply Company may suggest a desire to have ready access to the vessels after abandoning them. This location would be convenient if the owners needed to continue salvage operations post-deposition or if the abandonment was initially intended as a temporary caching.

Group Two

There are two sites in Group Two, 0001PQR and 1050PQR, both of which are located on the south bank of the Machelhe Island and lying parallel to shore underneath a modern dock (Figure 4.7). Vessel 1050PQR was located on Lemuel S. Blades III's (2009, pers. comm.) 1946-1947 unmeasured sketch as the "Old Metal Barge." Vessel 0001PQR is a ferrous riveted ship approximately 127.10 ft. (74.38 m) long and 23.62 ft. (7.2 m) wide. Mickey Thompson, an Elizabeth City landowner, obtained a permit to build a dock over the iron wreck in 1985 and contacted the NCUAB prior to construction. Following an investigation of the ship, Richard Lawrence and Mark Wilde-Ramsing determined the dock would be minimally invasive to the vessel.

Since the first inspection 25 years ago, the vessel has undergone possible metal salvaging or scavenging and has significantly deteriorated. Recent fieldwork in August 2009 revealed that the dock rests on the interior of the ship's hull, however, does not pierce the hull. The hull's starboard side rests against the perpendicular section of the dock and additional modern 2 x 4

ELIZABETH CITY SHIPS' GRAVEYARD GROUP TWO

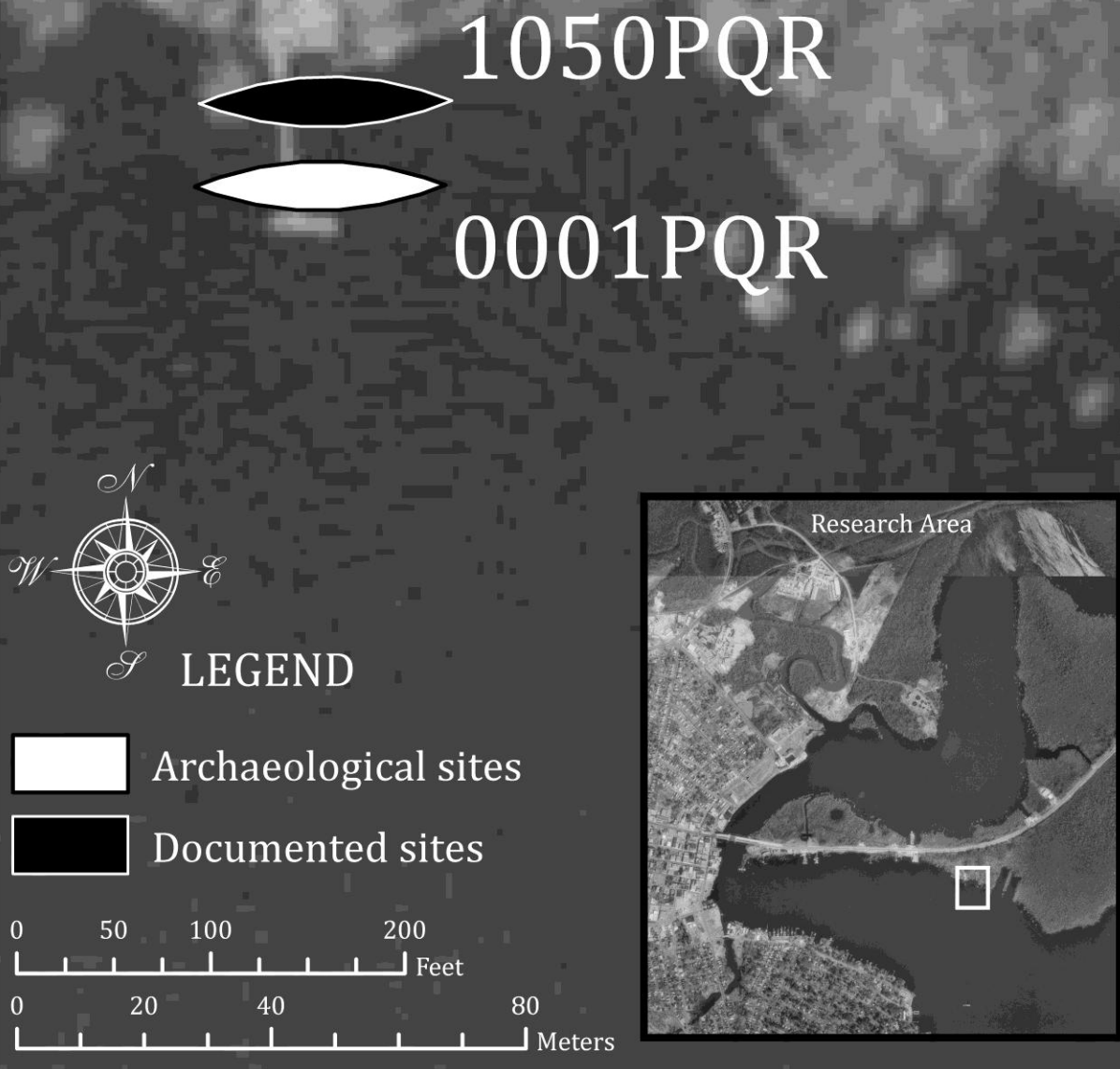


FIGURE 4.7. Map detailing Group Two (Map by author 2010). Vessels 1050PQR and 0001PQR are the same ship. Vessel 1050PQR was reported in the historical record as an Old Metal Barge and analysis with extant remains in the river have determined it to be the same ship as 0001PQR, the ferrous ship under the Thompson dock.

pieces of lumber have been driven against the exterior hull on the port side thereby providing a small amount of placement assurance. Despite some large sections of hull debris lying near the port side, it is likely that these support timbers are keeping the hull from flaying out to either side. The ship is no longer intact up to the gunwales as noted by Lawrence and Wilde-Ramsing (Figure 4.8) (Wilde-Ramsing 1985:1). The 7 ft. (2.134 m) depth of hold has diminished to approximately 4.92 ft. (1.5 m), however, the wooden plug in the propeller shaft remains intact.



FIGURE 4.8. Thompson's Wreck (0001PQR) lying under the modern dock on the south shore of Machelhe Island (Image courtesy of Richards 2009, annotations by author).

The official Elizabeth City investigation report (Wilde-Ramsing 1985:1) relates the archaeologists' failed attempt to identify the ship. Despite additional fieldwork, the identification of Thompson's Wreck (0001PQR) and its specific abandonment date remain elusive 25 years later. Newly unearthed historical information has begun clarifying some aspects of the vessel's life-cycle though.

Correlating historical accounts with the archaeological data has determined that the historic vessel Old Metal Barge (1050PQR) is synonymous with archaeologically documented

vessel Thompson's Wreck (0001PQR). This correlation reveals that the ferrous vessel was deposited into the archaeological context prior to 1947. The size of the vessel also provides possible information for establishing a deposition range. The Dismal Swamp Canal's locks were increased in 1899 permitting vessels of Thompson's Wreck/Old Metal Barge's (0001PQR/1050PQR) size to utilize the waterborne route to northern markets. If the vessel operated locally and if it used the canal to transport goods to northern markets, then it could only have done so after 1899. This creates a rough deposition range from 1899 to 1947. Blades' (2009, pers. comm.) reference to the vessel as the "Old Metal Barge" provides additional, though less concrete, depositional information. To be referred to as "Old" in 1947, the vessel would likely have been abandoned for a number of years to establish that title, and places the abandonment date closer to the 1899 end of the range.

Determining Thompson's Wreck/Old Metal Barge's (0001PQR/1050PQR) identity has been equally difficult. During the 1985 investigation carried out by Lawrence and Wilde-Ramsing, Mr. Fred Fearing, a local historian and the city's unofficial welcome committee, stated that "[the] boat was being built for Russia during World War I but the war ended before it was completed [and] it was subsequently towed across the river from the Elizabeth City Shipyard" (Records of the NCUAB 1985:1). It is unclear if Mr. Fearing meant to imply that the ships' construction was interrupted at the Elizabeth City Shipyard before being towed across the river or if he meant that the ship was towed from a different shipyard to its current location which happens to be across the river from the Elizabeth City Shipyard. Historic research has shed some light on Mr. Fearing's confusing statement.

The Elizabeth City Shipyard operated during both WWI and WWII, and the U.S. Navy did contract the shipyard to construct quick supply ships and submarine chasers (Colton 2009:1).

Some of these contracted ships were then sold to other countries, including Russia. However, these transactions occurred during WWII, not WWI, thereby disputing the accuracy of Mr. Fearing's statement pertaining to the abandonment date. Additionally, the quick supply ships and submarine chasers that were contracted to Elizabeth City Shipyard were wooden vessels not riveted iron like 0001PQR/1050PQR. This historic evidence suggests that Thompson's Wreck/Old Metal Barge (0001PQR/1050PQR) was not built at the Elizabeth City Shipyard, but was instead built elsewhere and towed to Elizabeth City to be abandoned.

Vessel 0001PQR/1050PQR is one of the few abandonments that display signs of modification and reuse. The plug in the propeller shaft suggests that the vessel was originally self propelled but the propulsion machinery was removed and the vessel repurposed. Alternately, the absence of the propeller shaft and engine machinery may be because they were salvaged prior to abandonment and reused on another vessel, or recycled for their metal value. Lemuel S. Blades III's (2009, pers. comm.) description of the "wreck of [the] Old Metal Barge" on the south shore of Machelhe Island in 1946-1947 not only correlates to 0001PQR in respect to location, but possibly its secondary purpose. What Mr. Fearing took to be a partially completed ship was in fact an old vessel that had served both a primary and secondary function before being partially salvaged and towed to Elizabeth City for abandonment.

Group Three

Group Three is comprised of 24 abandoned vessels. Ten have been archaeologically documented, thirteen were discovered through the historic record, and one site was only recently located. Figure 4.9 illustrates the distribution of vessels in Group Three into two main clusters. The southwest shore cluster of 14 vessels contains the newly located ship 0067PQR, historic vessels 1008PQR, 1019PQR, 1020PQR, 1021PQR, 1037PQR, and 1038PQR, and vessels



FIGURE 4.9. Group Three is divided into two clusters, one on the south shore of Machelhe Island and the other on the southwest shore (Map by author 2010). The southwest shore cluster is comprised of 17 archaeological and historic sites while the south shore cluster is composed of 7 historic sites.

0021PQR-0027PQR and 0030PQR-0032PQR, which have been archaeologically recorded at various times between 1985 and 1990. The south shore cluster is comprised of seven vessels, 1001PQR-1007PQR, all of which were located through the historic record. Each of these 24 vessels will be addressed in this section and analysis will reveal any correlating vessels in the historic and archaeological records.

Vessel 0021PQR was first recorded by NCUAB archaeologists Lawrence and Wilde-Ramsing on 5 September 1985 while investigating the permit site of a proposed marina on the southwest end of Machelhe Island (Wilde-Ramsing 1985:7,9). Initial findings identified 0021PQR as a small wooden vessel named *Ruth*, official number 284740, and abandoned with the bow facing the shore. Wilde-Ramsing (1985:7) reported that the remaining steering quadrant was partially visible but the stern was obscured by sediment. Re-examined by Gordon Watts in 1990, the presence of fiberglass resin and matt on the remains was documented and a site plan was drawn (Figure 4.10). Fiberglass became a popular repair medium in the late-1960s suggesting that *Ruth* was a small early-1950s deadrise fishing or pleasure vessel that was repaired in the 1960s. Vessel 0021PQR was abandoned prior to 1980 based on its photograph on the cover of a late-1970s edition of the magazine *A Pictorial History of Elizabeth City, North Carolina* (Watts 1990:16). This creates an approximate deposition date range of 1960-1979.

Vessel 0022PQR was also recorded during the 1985 NCUAB survey though less is mentioned about this vessel. Wilde-Ramsing (1985:7) reported that 0022PQR is a small orange painted wooden boat with the registration designation NC2667T. The only construction characteristic Wilde-Ramsing (1985:7) remarked upon was “a ‘Y’ shaped stem post carved out of a single board.” Watt’s investigation of the same area in 1990 revealed vessel remains in a similar location to 0022PQR that, until this examination, were mislabeled as new site 0030PQR.

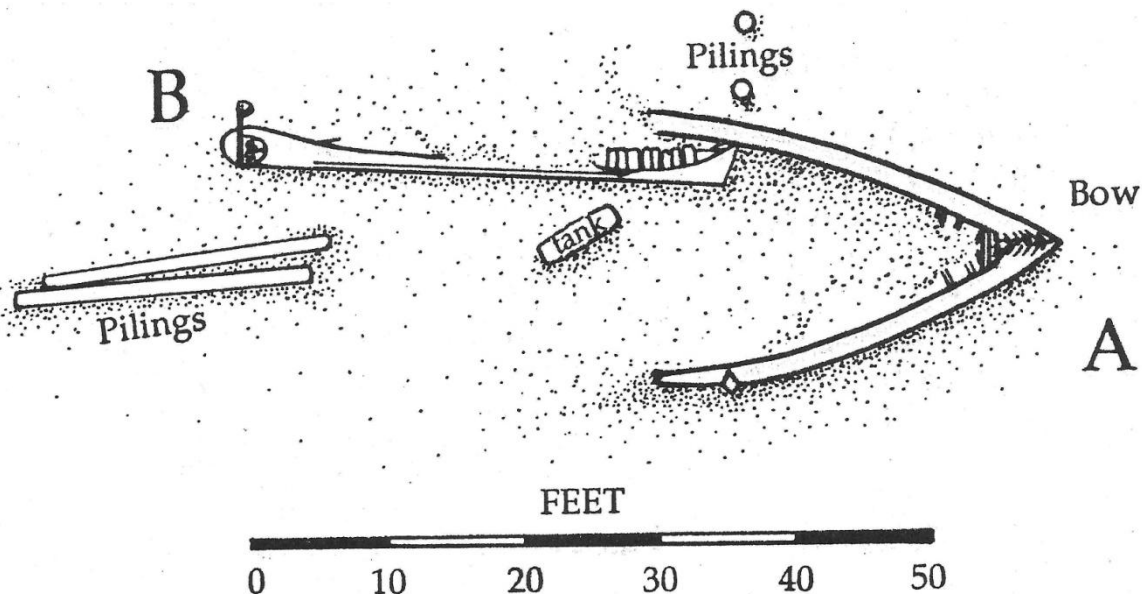


FIGURE 4.10. The 1990 site plan of 0021PQR, labeled 'A', and 0022PQR, labeled 'B' (Watts 1990:13).

In the five years between 1985 and 1990, vessel 0022PQR underwent sufficient transformation to be unrecognizable from the earlier survey. Watts (1990:12) recorded newly visible construction characteristics and associated machinery such as an iron stuffing box, a three-blade cast iron propeller, and a galvanized steel fuel tank that were not noted in the 1985 report. The distinguishing “Y” shaped stem carved from a single timber was still present (Figure 4.10) and provided the means to identify 0030PQR as the earlier recorded 0022PQR. This comparison of Wilde-Ramsing (1985) and Watts (1990) reports reveals that sites 0022PQR and 0030PQR are the same vessel.

The recent investigation of the southwest end of Machelhe Island in March 2009 revealed no evidence of vessels 0021PQR or 0022PQR/0030PQR. An interview with a nearby homeowner revealed that waterfront maintenance and landscaping by previous and current residents had involved the removal of timbers and debris for the construction of a rock retaining wall (Ms. Martin 2009, pers. comm.). The two sites 0021PQR and 0022PQR/0030PQR may have deteriorated to an unrecognizable state so that people did not realize what they were

removing from the archaeological context or the individuals did not regard the ship remains as significant. Nineteen years had passed between the 1990 survey and the March 2009 survey, so it is also possible that the remains were removed or destroyed during the intervening years and the homeowners removed non-related debris from their waterfront. Given the documented deterioration of 0022PQR from 1985 to 1990, n-transforms could likely have destroyed both vessels over the past 19 years. For example, Hurricanes Fran and Floyd did serious damage to eastern North Carolina when they made landfall in 1996 and 1999 respectively, and they are just 2 of the approximated 40 tropical storms that have impacted North Carolina since 1990 (State Climate Office of North Carolina 2009:1). Regardless of the destruction method, sites 0021PQR and 0022PQR/0030PQR now only exist in previous archaeological reports and the historic record.

Wilde-Ramsing and Watts failed to mention any site formation processes during their respective 1985 and 1990 inspections of 0021PQR and 0022PQR/0030PQR. It is unclear if any modifications were made to either vessel that would have resulted in secondary use. The presence of valuable machinery, an iron steering quadrant and galvanized steel fuel tank on 0021PQR and iron stuffing box, shaft, and three-blade propeller on 0022PQR/0030PQR, suggests minimal salvage or scavenging behaviors occurred on these two vessels. Pilings labeled in the 1990 site map (Figure 4.10) are standing outside and lying beside the two vessels. This is not a strong case for placement assurance because there were no buildings or marinas in that location that needed protecting from the moving remains of two small boats. It is more likely that the pilings were there first and the two vessels were abandoned tied up to the pilings.

Two hundred and fifty feet to the south of sites 0021PQR and 0022PQR/0030PQR, at the east end of the Texaco Tanks dock, Watts discovered and recorded two additional vessels in

approximately six feet of water, sites 0031PQR and 0032PQR. Site 0031PQR is a wood hull vessel 135-145 ft. (41.15-44.20 m) long and 22-30 ft. (6.71-9.14 m) wide, that is deeply buried in sediment and overlying debris. Probing determined several sets of stringers and a set of timbers that could have been either engine mount timbers or oil tank support timbers along the interior of the hull (Figure 4.11). Watts (1990:16-17) posits this hull could represent a previously undocumented construction type in northeastern North Carolina, that of the early oil tankers that serviced Elizabeth City during the end of the 19th century and throughout the early decades of the 20th century. Proximity to the Texaco oil platforms lends support to this supposition.

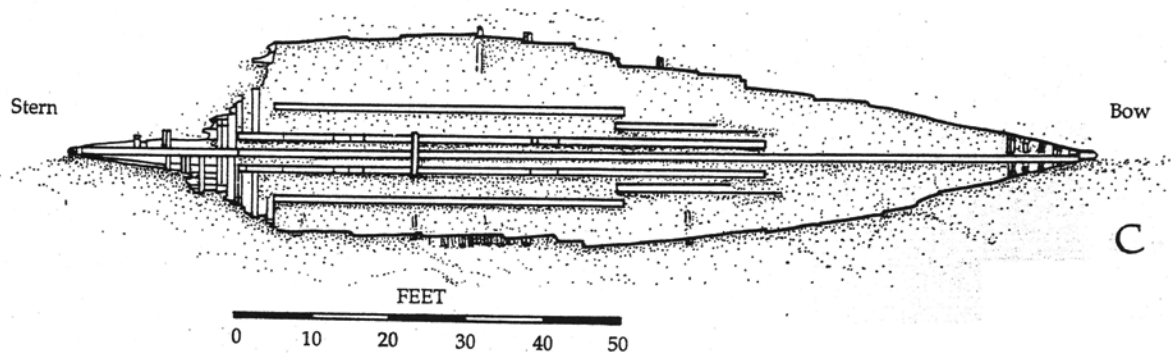


FIGURE 4.11. Watts' site plan of vessel 0031PQR, seen here labeled 'C' (Watts 1990:13).

Site 0032PQR is likely the heavily damaged remnants of a 66 foot (20.12 m) late-19th or early-20th century centerboard schooner. Watts (1990:15,17) noted the presence of a 12 ft. (3.66 m) centerboard trunk offset to port, a mast step aft of the stem, and a keelson stepped aft of the centerboard trunk. The stern section of the hull lies underneath the eastern most concrete Texaco platform, a situation that could have occurred before or after the construction of the tank platforms (Figure 4.12). Single and double masted centerboard schooners operated in Elizabeth City around the turn of the 20th century forming economic ties up and down the eastern seaboard prior to the use of power work boats in the early 1900s (Watts 1990:18). Vessel 0032PQR

represent a facet of eastern North Carolina's turn of the century economy and Watts (1990:18) recommended further documentation before developing the area.

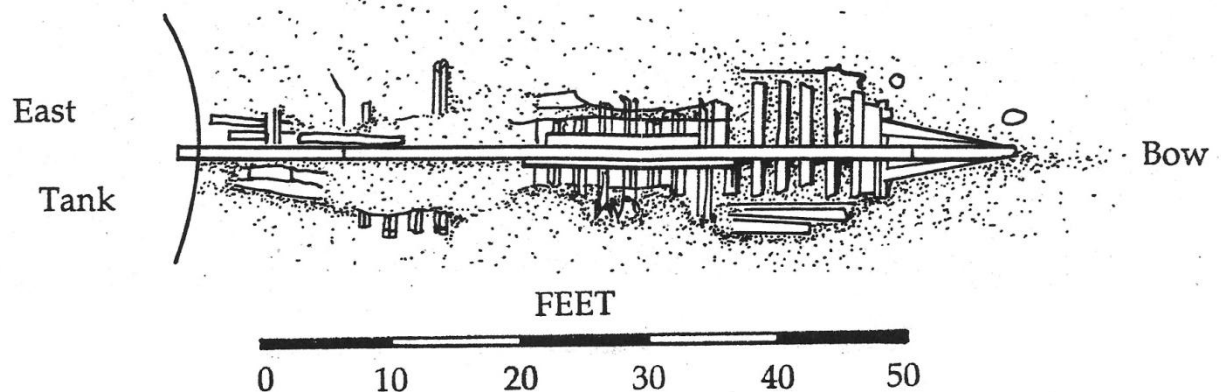


FIGURE 4.12. Watts site plan of vessel 0032PQR (Watts 1990:13).

The 1935 Army Corps map identified three wrecks in the vicinity of the Texaco oil platforms (Figure 4.9). Two of those vessels, most likely 1008PQR and 1038PQR, appear to correlate with vessels 0031PQR and 0032PQR, however, the third vessel, 0037PQR, has not been relocated for archaeological investigation. Specific deposition dates for these three vessels are unknown, but their presence on the 1935 map determines a *terminus ante quem* of 1935. Iron-hull, steam driven oil tankers were used worldwide by 1935 suggesting that these wooden-hulled tankers could have been abandoned because of their obsolete technology. Based on the size of the two vessels that were archaeologically recorded, they would only have been able to traverse the DSC after its 1899 alterations thereby supplying a *terminus post quem* of 1899. More information is needed to further reduce the 1899-1935 deposition range or identify each vessel individually.

The June 2009 side scan sonar survey detected no maritime relevant targets in the area south and east of the Texaco dock. The shallowness of the area combined with the downward directionality of the fish's sonar likely attributed to these vessels' absence from the side scan data set. It is also possible that the vessels have deteriorated beyond recognition as ships, were

removed from their known locations, or lie beneath a significant amount of sediment to obscure their position. The latter, sediment obstruction, is the most likely option as Watts made frequent mention of the amount of sediment and debris obscuring the vessels in 1990 and the presence of two of the three vessels suggests that they were not removed from their positions (Watts 1990:13-16).

The southwest end of Machelhe Island marks the location of previously recorded sites 0023PQR-0027PQR, the newly located vessel 0067PQR, and the historic vessels 1019PQR-1021PQR. Figure 4.9 illustrates the location and orientation of these vessels. Spatial relationships between the historic and archaeological vessels are analyzed in this section to clarify any vessel correlations in the cluster that includes 0023PQR-0026PQR and 1019PQR-1021PQR. Lawrence and Wilde-Ramsing first investigated site 0023PQR in September 1985, which resulted in a detailed site map and description of the well intact 50 x 16 ft. (15.24 x 4.88 m) centerboard schooner. They observed that the 12 ft. (3.66 m) long centerboard trunk was well preserved, as was the aft apron deck, engine, rudderpost, and rudder, all of which are represented in the site plans in Figure 4.13 (Wilde-Ramsing 1985:7).

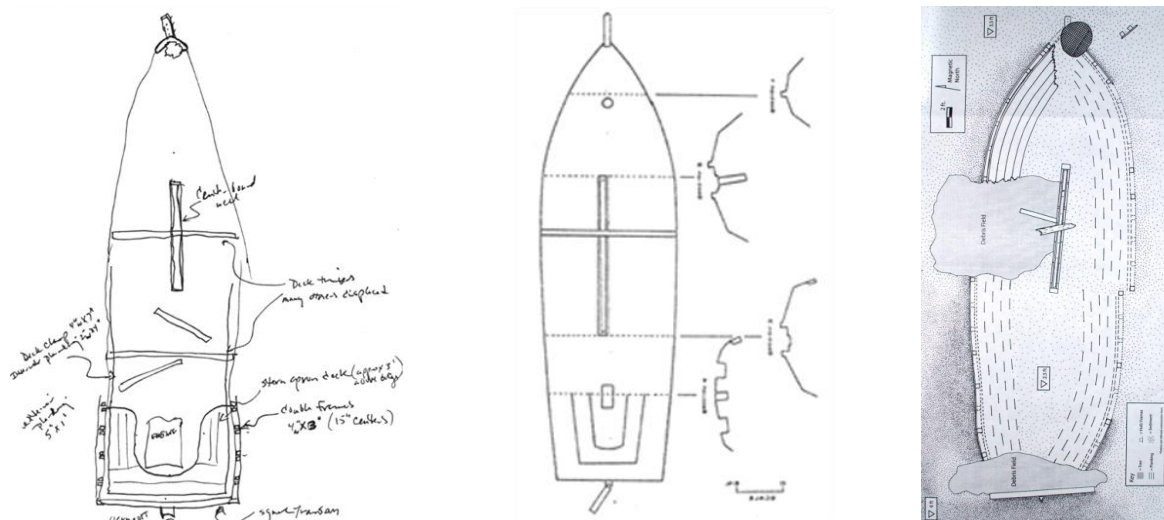


FIGURE 4.13. 0023PQR site reports by Lawrence and Wilde-Ramsing in 1985 on the left, Watts in 1986 in the center, and Petrey in 2009 on the right (Wilde-Ramsing 1985:19; Watts 1986:14; Petrey 2009:30).

Further documentation carried out in October 1985 by Gordon Watts added a hull depth of 3.5 ft. (1.07 m) and identified its modern origins through analysis of machine made construction materials. Watts suggested that the single masted centerboard schooner is either a Chesapeake Bay skipjack or two sail bateau constructed between 1900-1925, and could have been in use as late as 1975 (Figure 4.14) (Hanson 1985:3). He based these dates on the modern construction materials and well documented examples of skipjacks and bateaus from the turn of the 20th century.

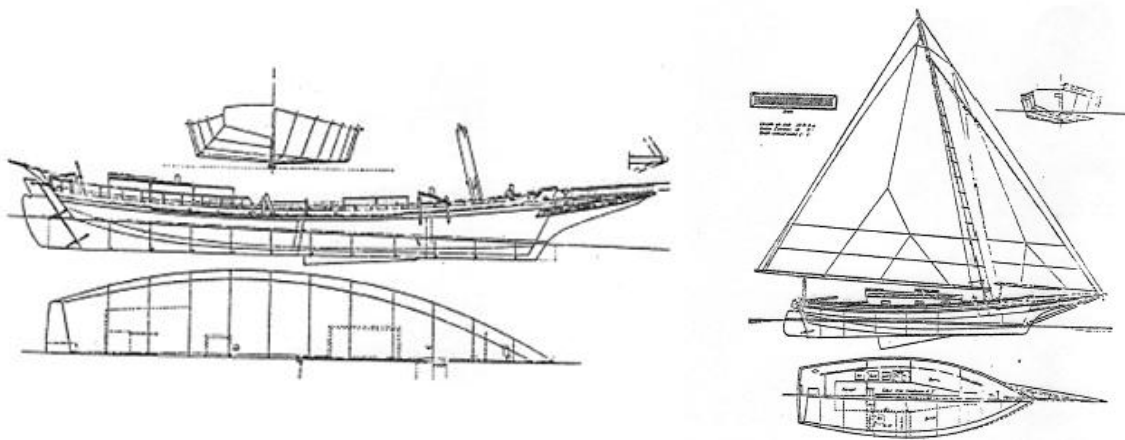


FIGURE 4.14. Two sail bateau on the left and skipjack on the right (Watts 1986:22).

The March 2009 inspection by Whitney Petrey, Joseph Lengieza, and the author provided an opportunity to monitor site conditions rather than gather new diagnostic information. The site has deteriorated drastically in the almost 25 years since last recorded, evidence of which is visible in the most recent site map (Figure 4.13). The rudderpost is the only remaining stern structure, the centerboard trunk has lost some of its upper timbers, the port side is flaying out, and the Cyprus tree growing in the bow is causing tremendous strain on the stempost and is likely the next area of the vessel to collapse.

Two smaller vessels, 0024PQR and 0025PQR, were located adjacent to and north of 0023PQR during the October 1985 survey (Figure 3.5). Neither vessel possessed enough extant

Site 0026PQR is a 44 x 16 foot (13.21 x 4.88 m) centerboard sailing vessel located parallel to the shoreline just southeast of 0023PQR's bow (Figure 4.16). Modern materials including rubber bilge pump diaphragms, machine planed lumber, and machine cut fasteners were used to construct the vessel (Hanson 1985:6; Watts 1986:32-33). Recent field work located the remains of 0026PQR but no further light could be shed on the identification or abandonment circumstances from the little hull structure left.

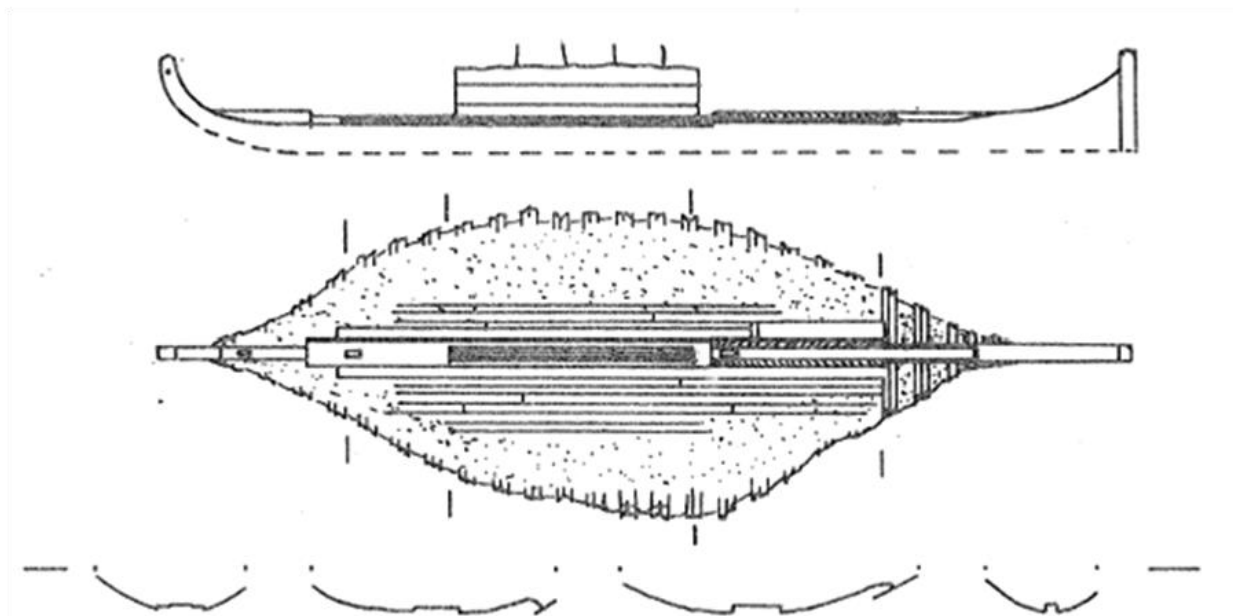


FIGURE 4.16. Watts' 1985 October site map of vessel 0026PQR (Watts 1986:18).

Vessel 0026PQR's construction type most closely represents a Chesapeake Bay bug-eye or brogan (Figure 4.17) but with no upper hull and little bottom left it is impossible to positively identify the vessel one way or another. Both the Chesapeake Bay bug-eye and brogan vessel types are well documented in the historical and archaeological records at the Mariners Museum and Chesapeake Maritime Museum (see also Chapelle 1960, 1988; Burgess 1963, 1975). It is unlikely that this specific vessel would add any new information to the understanding of either vessel typology.

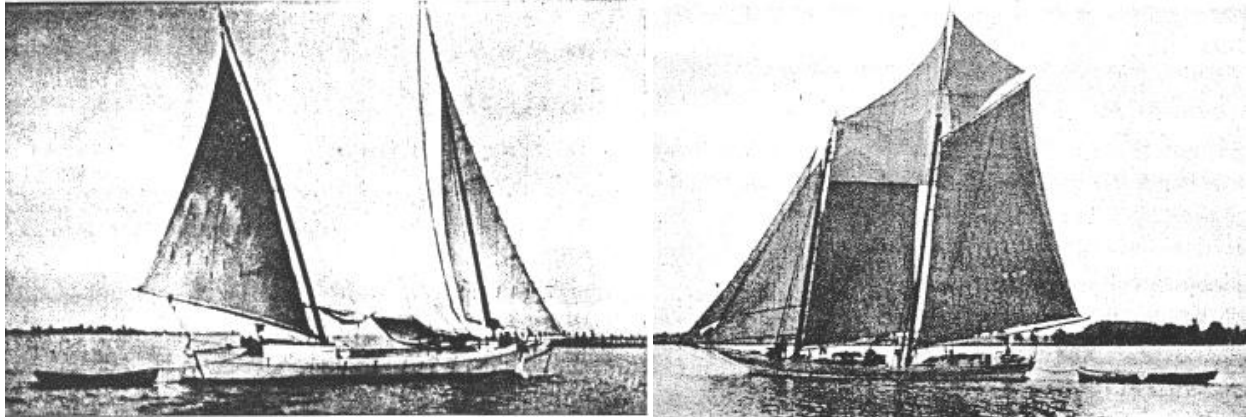


FIGURE 4.17. A Brogan underway, left, and Bugeye *George T. Philips*, right (Watts 1986:34-35).

The three historic vessels, 1019PQR-1021PQR, spatially correspond with the 0023PQR-0026PQR vessel cluster (Figure 4.9). The positions of 1019PQR-1021PQR were estimated based on the position of three vessels drawn on a 1946-1947 unmeasured sketch made by Lemual S. Blades III that detailed the locations of numerous abandonments in the Pasquotank River (Figure 3.3). One vessel was positioned perpendicular to the river with its bow towards the shore, 1019PQR, another vessel at a 45 degree angle to shore, 1020PQR, and the third vessel was drawn broken and lying just off the western shore, 1021PQR. Also important was Lemuel S. Blades III's (2009, pers. comm.) description of the vessels' condition as "so rotten, slime-covered, and low in the water it seemed that they had returned to nature."

Vessel 1019PQR exhibits striking similarities to vessel 0023PQR in both location and orientation perpendicular to the shore. The fact that it was abandoned prior to 1947 also correlates with the estimated abandonment date for vessel 0023PQR. A 1950 aerial photograph of that area also shows a cluster of what could be abandoned vessels just south of an active marine railway and marina, evidence that further substantiates the theory that vessel 0023PQR and 1019PQR are the same centerboard schooner (Figure 4.18). Finally, Blades' description of the condition of the vessel as partially submerged is verified in the 1950 aerial photograph. While it cannot be stated conclusively that 0023PQR is the extant remains of historic vessel



FIGURE 4.18. The 1950 aerial photograph detailing the west bank of Machelhe Island, note the highlighted area with suspected abandonments south of the active marina (Lemuel S. Blades III Collection, annotations by author).

1019PQR, the similarities in their position, orientation, and condition as seen in the contemporary photograph and described by Blades strongly support that correlation.

The 1950 aerial photograph highlights at least four other vessels in addition to the one that has been tentatively identified as 0023PQR/1019PQR, and since 0023PQR/1019PQR is still in the archaeological record it follows that the others are also there. Comparing the archaeological data with the 1950 photograph revealed one incongruous aspect of Blades' placement of vessels 1020PQR and 1021PQR on his unmeasured sketch. Blades drew 1020PQR and 1021PQR to the south of 1019PQR when in fact they were abandoned north of the vessel. These corrected positions were determined by the existence of vessel 0024PQR and 0025PQR in the archaeological record and the lack of appropriately sized vessels to the south of 0023PQR/1019PQR in the 1950 photograph (Figure 4.18). This analysis suggests that historic vessels 1020PQR and 1021PQR correlate to extant vessels 0024PQR and 0025PQR. Additionally, the large vessel to the south of 0023PQR/1019PQR in Figure 4.18 corresponds with 0026PQR's extant remains and suggested vessel type.

These tentative identifications were made under three assumptions. First, it is assumed that the vessel Blades described as broken was in fact partially submerged under the substrate

thereby appearing broken. Second, it is assumed that some vessel movement occurred over the intervening fifty-plus years that slightly shifted the historic vessels into their archaeological positions. These movements are not unrealistic considering the amount of severe weather that affects the eastern coast of North Carolina on a yearly basis. Third, it is assumed that the three vessels Blades identified were not removed from the river in the three years between his unmeasured sketch and the 1950 photograph and then a whole new cluster of ships deposited in the same location. Based on the degree to which some of the vessels are submerged, it seems probable that they had been abandoned in that location for a number of years prior to the 1950 photograph. The final assumption was that the 1950 vessels were not removed during the river clean-up later in that decade and the extant remains in the river just happen to be in the same location. While the author believes these to be reasonable deductions there is the possibility that one or more of these assumptions are incorrect, and that it would necessitate changes in the corresponding historical and archaeological vessel correlations.

Vessel 0027PQR is the final previously recorded vessel located off the southwest end of Machelhe Island. Submerged close to the center of the active waterway, site 0027PQR was recorded during the October 1985 archaeological survey. Measured as 85 ft. (25.91 m) long and 16.33 ft. (5 m) wide, the barge lies parallel to the channel with its disarticulated bow slightly upriver and tilted to the northeast. Watts (1986:15) observed that the bow was intact to the deck, the rest of the hull had been burned to the waterline, and that the stern sustained the most damage and was only intact to the propeller shaft alley in the deadwood. Site 0027PQR was not revisited during recent fieldwork due to excessive water depth and its proximity to the active boating channel, however, the June 2009 remote sensing verified that the vessel is still present in the same location with minimal visible differences from the 1985 site map (Figure 4.19).

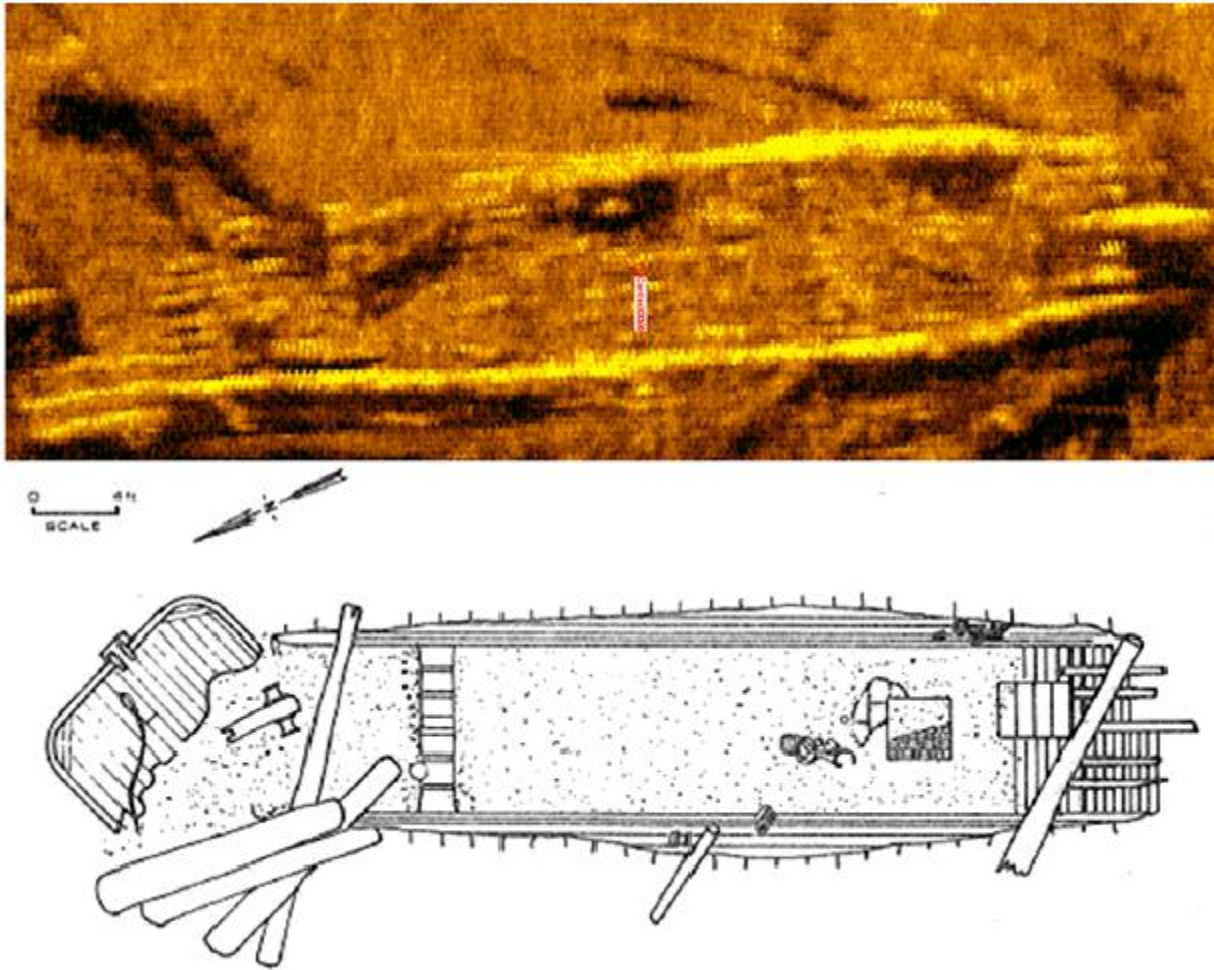


FIGURE 4.19. The 2009 Side scan image of 0027PQR (top) and 1985 site map (bottom) (Watts 1986:16; Richards and Smith 2009:34). The images are not at the same scale and the bow is not included in the sonar image.

Construction characteristics observed on 0027PQR supports a tentative identification of the barge. Both the ends and sides of the barge are raked at approximately 45 degrees, a design seen frequently in snag boats operating in South Carolina around the turn of the 20th century (Figure 4.20) (Hanson 1985:4; Watts 1986:28). The presence of a double-head windlass and evidence of a small steam boiler and engine supports further supports the suggestion that the barge functioned as a snag boat. Ice tongs and other artifacts located within the confines of the hold do not preclude the barge's function as a commercial vessel though, so no definitive identification can be made at this point.

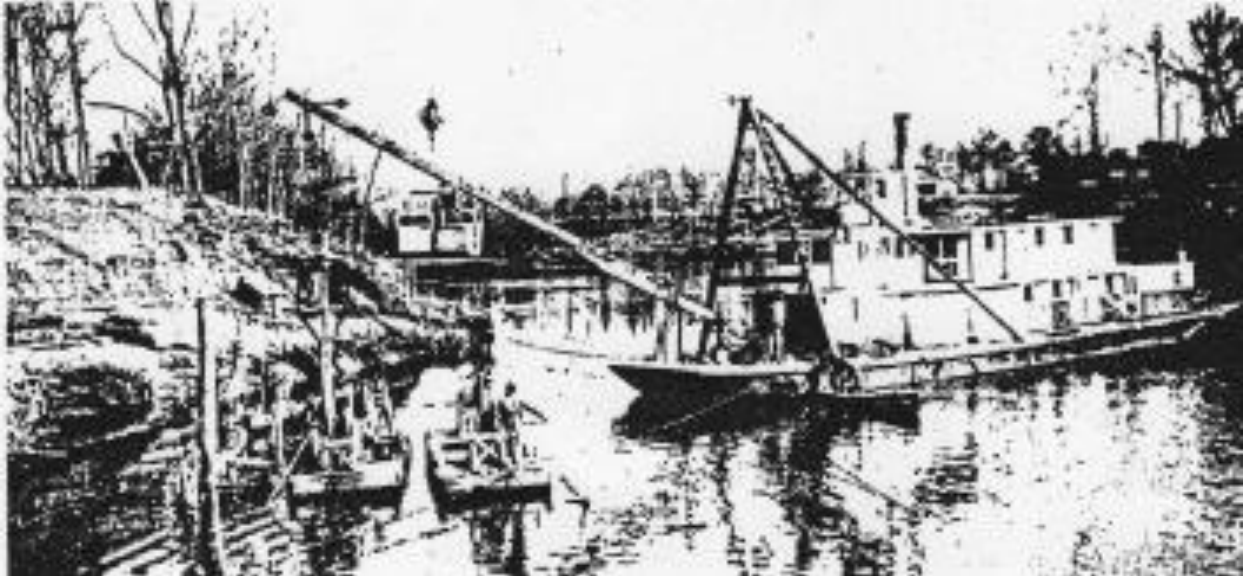


FIGURE 4.20. Unidentified snag boat, note the angled ends and sides (Watts 1986:31).

Richards (2002:259) states that fire is one form of hull treatment that minimizes the size of a vessel. Watts' (1985:15) observed that 0067PQR was burned to the waterline which suggests that the owners utilized hull minimization when abandoning the barge. There is also the possibility that the barge burned accidentally and sunk in place. There are construction indicators that snag boat 0027PQR was screw propelled. Absence of the boiler, engine, prop-shaft, and propeller suggests further reductive behaviors of either pre- or post-abandonment salvage or scavenging. While *deliberate abandonment* seems the most likely depositional method, there is the possibility that this vessel burned elsewhere and was relocated to this location and then sank which would be a *catastrophic abandonment*. The final deposition alternative is that the vessel was *consequentially abandoned* and was either burned or sunk to prevent a greater loss of human life, loss of cargo, or damage to wharf structures.

Site 0067PQR represents the only newly acquired site in Group Three. The vessel was located during remote sensing and lies in approximately 15-20 ft. (4.57-6.10 m) of water south of the 158 Bridge on the Camden County side of the river. Due to its depth and lack of SCUBA

equipment this target was not ground truthed to obtain further information. Figure 4.21, the side scan image of the vessel, shows the majority of the ship's hull. The image reveals a ship with an intact deck, lying at a slight angle which corresponds with the slope of the river bottom. Hull integrity rules out explosion or burning as the cause of this vessel's sinking. Future work in the area should include additional documentation of vessel 0067PQR to obtain more specific construction and identification information.

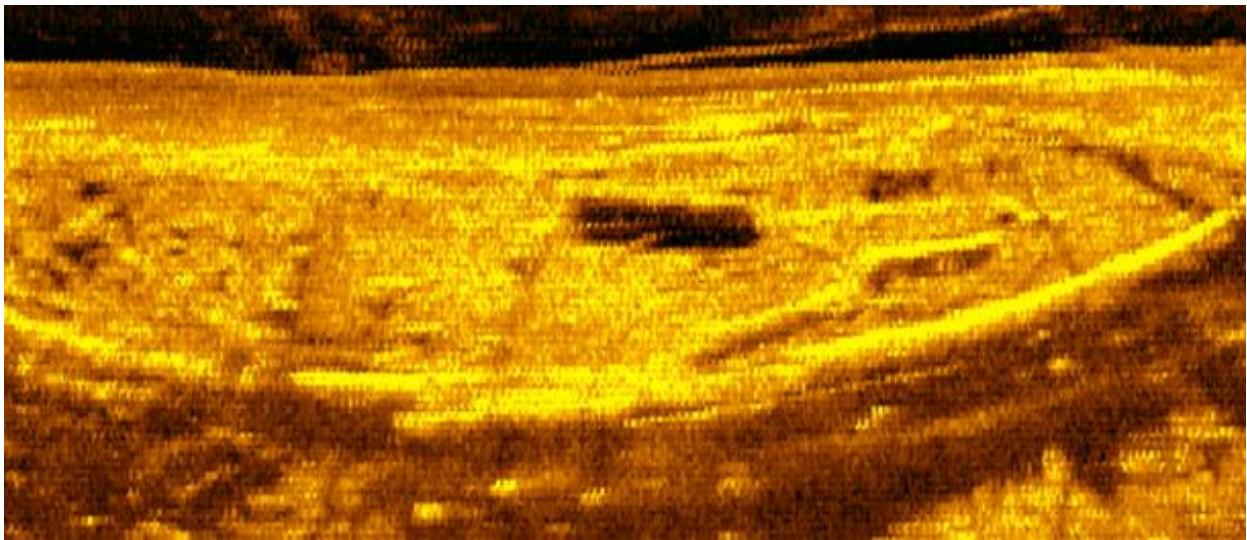


FIGURE 4.21. Site 0067PQR, originally side scan target 0057, lying in situ in the Pasquotank River (Richards and Smith 2009:20).

The final cluster of abandonments in Group Three were located off the south side of Machelhe Island. This cluster of historically identified abandonments is comprised of Lumber Barge (1007PQR), Oyster Barges 1-4 (1003PQR-1006PQR), sailing vessel *Thomas J. Shryock* (1001PQR), and an unidentified sailing vessel (1002PQR) (Figure 4.9). The positions of these historic vessels were largely determined by referencing Lemuel S. Blades III's 1946-1947 unmeasured sketch (Figure 3.3). Contemporary photographs further aided in obtaining the most accurate positioning of these ships within the graveyard.

Lemuel S. Blades III (2009, pers. comm.) recalls Lumber Barge in this location prior to WWII and before the completion of the new causeway. The bridge connecting Elizabeth City to

Camden County was completed in 1931, but the causeway on Machelhe Island was not completed until 1943-1944 (Pasquotank County Yearbook 1975: 94-99; Butchko 1989:234-235). This creates a pre-1939 deposition date for 1007PQR. The absence of Lumber Barge on the 1935 map further reduces the deposition range to the years of 1935 to 1939. Blades also recalled that the four Oyster Barges' abandonment coincided with the construction of the Camden Causeway, which limits their abandonment to a range between the years 1931 and 1944. The oyster barges' absence from the 1935 Army Corps map further reduces that range to 1935-1944. Blades (2009, pers. comm.) also stated that Lumber Barge was the first vessel to be abandoned at that location.

Numerous contemporary photographs support the accuracy of Blades' 1946-1947 unmeasured sketch. In an aerial photograph from 1923, the barges are absent from the waterfront because, as Blades stated, they were not yet abandoned (Figure 4.22). In aerial photographs from 1945 and 1948, the lumber and oyster barges are present in the approximate locations shown on the unmeasured sketch (Figure 4.23).

An aerial photograph taken in 1950, two years later, reveals the absence of Lumber Barge and Oyster Barges 1-4 from the waterfront (Figure 4.24). While a river clean-up plan occurred during the late-1950s, these barges were removed prior to that plan's initiation. It is reasonable to conclude, therefore, that these vessels were a type of deliberate abandonment known as storing or caching, a curate behavior well documented in the archaeological record. Schiffer (1987:92) discusses how caching results when functional and valuable items that are not required for immediate use are deliberately stored in a deposition area in a manner so that upon return, the item may resume its function (see also Stevenson 1982:252-253). While Schiffer and Stevenson discuss caching in terms of highly mobile societies and Yukon mining camps, this behavior is applicable to this area of the Elizabeth City Ships' Graveyard as well.



FIGURE 4.22. Aerial map of Machelhe Island from 1923, note the absence of any abandoned vessels in the highlighted area (Watts 1986:23, annotations by author).

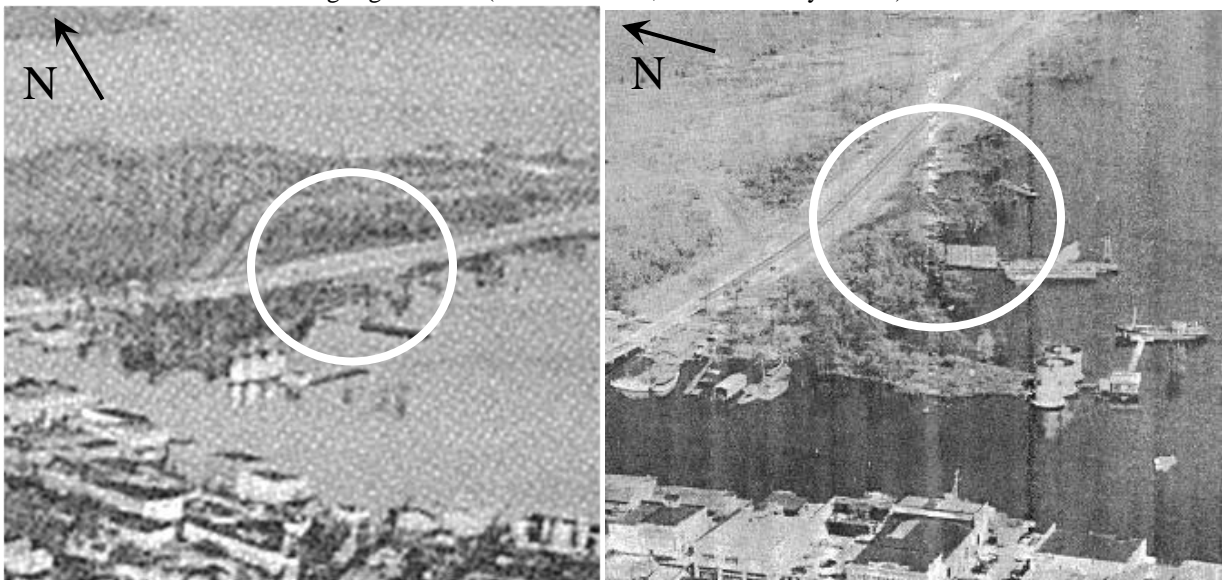


FIGURE 4.23. Aerial maps of Machelhe Island from 1945 (left) and 1948 (right) showing the abandonment cluster on southern Machelhe Island (Watts 1986:24-25, annotations by author).

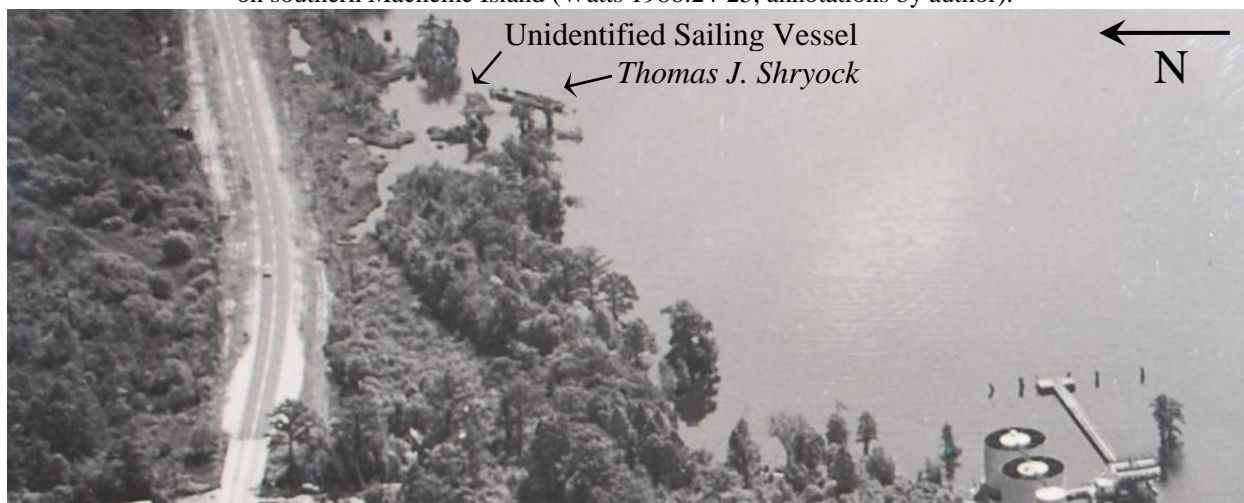


FIGURE 4.24. Aerial photograph of Machelhe Island in 1950 illustrates the removal or destruction of vessel 1003PQR-1007PQR from the abandonment cluster while *Thomas J. Shryock's* (1001PQR) hulk and the unidentified schooner 1002PQR remain in the river (Lemuel S. Blades III Collection, annotations by author).

Lemuel S. Blades III (2009, pers. comm.) and his friends often “hung out” on the barges because they kept a secret stash of cigarettes there, far from their parents’ prying eyes. Blades remembers the barges’ decking and lower hulls to be in good shape, and while broken dredging hoses and machinery were temporarily stored there during the causeway construction, they were removed when the project ended, leaving the vessels in the condition they were in when originally deposited. Blades’ assessment of the barges’ seaworthiness further supports the hypothesis that these vessels were cached rather than permanently abandoned. Alternately, there is always the possibility that the vessels are still in the river. This would have required extensive deterioration, by either c-transforms, n-transforms, or some combination of both, to occur in the two years between their intact state seen in the 1948 photograph and their complete absence from the 1950 photograph.

Two schooners were located just east of the barge cluster on Machelhe Island’s south shore. *Thomas J. Shryock* (1001PQR) which was abandoned with its bow facing downriver and towards shore positioned at a slight angle, and an unidentified schooner (1002PQR) positioned between the shore and *Shryock* (Figures 3.3, 4.9, and 4.24). *Thomas J. Shryock* was a Chesapeake Bay Ram built in Bethel, Delaware, in 1891 (Department of Commerce, Bureau of Navigation 1913:91). *Shryock* was towed to Elizabeth City and abandoned after wrecking on North River Bar, North Carolina in the fall of 1940 (Burgess 1971:201). Lemuel S. Blades III (2009, pers. comm.) mentioned that the second schooner was not included on the 1946-1947 unmeasured sketch because it was already in an advanced state of deterioration. The unidentified schooner does not appear on the 1935 map suggesting that the vessel was deposited after the map was drawn in 1935, and judging by its advanced deterioration when compared to *Shryock*, it was likely abandoned prior to 1940. This creates a five year window for unidentified schooner

1002PQR's abandonment. There is a small possibility that 1002PQR was left off the 1935 map because it was not a navigational hazard and therefore did not need to be charted, however, a number of the other wrecks were included on the map when they were clearly not navigational hazards.

If Lemuel S. Blades III' memory of the lumber barge's placement prior to 1939 is accurate, it is likely that the wrecked *Thomas J. Shryock* and other vessels were added to that area because there was the appearance of a discard location for vessels. Schiffer's (1996:62) assertion that "people tend to dump trash where others have previously dumped trash" is applicable to ships' graveyards and may account for the accumulation of abandoned vessels at this location.

The 1950 aerial photograph (Figure 4.24) shows vessels *Thomas J. Shryock* (1001PQR) and presumably, the remains of Unidentified Schooner (1002PQR) present in the archaeological record in 1950. The January 2009 visual survey identified no material remains of 1001PQR and 1002PQR and remote sensing in June 2009 revealed no significant maritime cultural material in this area. The side scan in this area did not obtain 100% coverage because the angled beams of the sonar fish missed any material remains close to shore or in shallower water that itself. The late-1950s river clean-up may have removed the hulks or it is possible that the vessels deteriorated beyond a recognizable state in the sixty years since deposition and are now in the river's muddy substrate. Additionally, that stretch of shoreline has undergone considerable commercial and residential development since the 1945, 1948, and 1950 photographs were taken, so it is also possible that any material remains were removed or destroyed during the construction of a local marina, waterfront restaurant, or nearby condominium complex.

Group Four

Group Four represents the cluster of vessels north of the U.S. 158 bridge, located predominantly on the Camden County side of the Pasquotank River. There are currently four archaeological sites remaining in the river, 0028PQR, 0051PQR, 0052PQR, and 0072PQR. The additional 18 vessels represent an earlier phase of the graveyard discovered through historic sources, many of which were removed during the late-1950s river clean-up and are now present only in the historical record (Figure 4.25). The correlation between historic and archaeological vessels in this group will be discussed on an individual basis in this section.

The NCUAB and Bottom Image Side Scan Sonar Mapping investigated site 0028PQR in 2004. Researchers detected the vessel via side scan sonar and divers found the intact hull resting in 25 ft. (7.62 m) of water parallel to the modern bulkhead of the Elizabeth City Bible College on the west side of the river. The pointed bow faces upstream and the square stern shows no evidence of propeller shaft or rudder assembly. Iron bits were still attached to the stern decking which was relatively intact, barring a large hole amidships. Archaeologists' historical research likened the sunken vessel to the barges that hauled products through the Dismal Swamp Canal in the early-20th century, similar to but on a smaller scale than the ones abandoned slightly up river, 0002PQR-0005PQR, 0007PQR and 0008PQR (Underwater Archaeology Branch 2004:2-3). The recent fieldwork did not revisit 0028PQR because it was sufficiently investigated in 2004.

The barge's position so close to the shore, near what would have been an active waterfront area, suggests that the vessel sunk accidentally while tied to a dock and was not retrieved. The low profile of the barge did not present a large enough navigational hazard to warrant the expense of recovering it or removing it to a different location. The vessel's absence from the 1935 map proposes an abandonment range from 1935 to 1985.

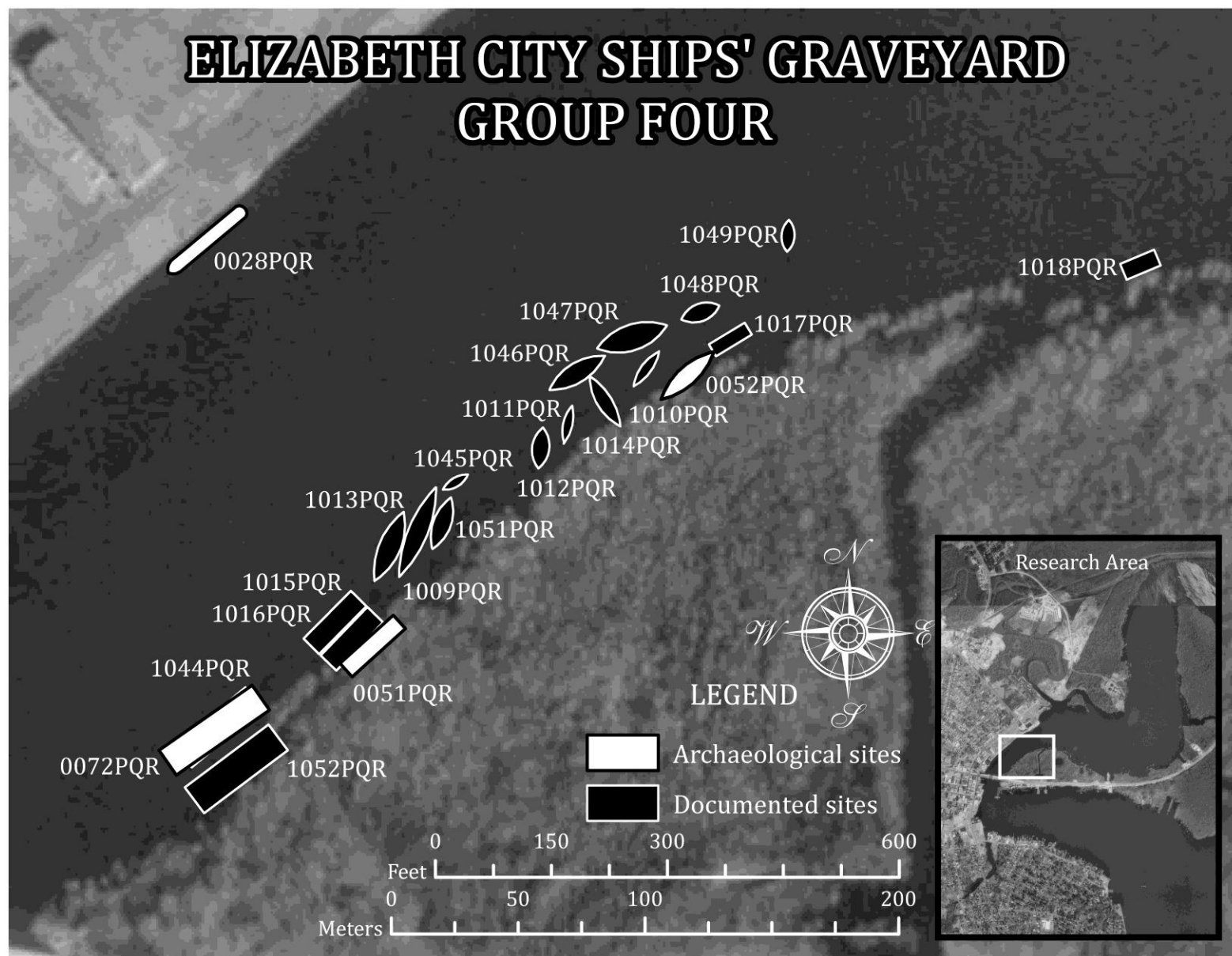


FIGURE 4.25. 2010 Site plan for Group Four, including historic and archaeological vessels north of the U.S. 158 bridge (Map by author 2010).

Ground truthing two June 2009 remote sensing targets identified three new sites. Investigation of target 0019 resulted in the location of a large amount of rebar-filled concrete. The 1935 map included a large barge wreck in a location similar to target 0019, designated 1044PQR, but no descriptions accompany the map so it was unclear what type of barge was located there. Lemuel S. Blades III (2009, pers. comm.) mentioned a concrete barge above the U.S. 158 bridge, designated 1052PQR, and provided photographs of the area. It was not until these two historic barges and the material remains were compared that target 0019 was deemed potentially significant and labeled 0072PQR. A 1918 photograph of the area just north of the U.S. 158 bridge shows buildings and wharf structures where concrete barges for WWI were being constructed (Figure 4.26) (Lemuel S. Blades III 2009, pers. comm.). Site 0072PQR's location coincides with the concrete barge construction plant, the 1935 barge wreck 1044PQR's location, and Blades' description of 1052PQR. This strongly supports the likelihood that 0072PQR, 1044PQR, and 1052PQR are the same vessel, the remains of a concrete barge constructed and abandoned on Machelhe Island's west bank during the late 1910s.



FIGURE 4.26. A southbound barge being pushed under the U.S. 158 bridge in the foreground with the government operated concrete barge construction plant to the right of (Lemuel S. Blades III Collection). This location coincides with the location of 0072PQR concrete and rebar remains.

A visual survey of the shoreline between target 0019 and 0021 unearthed an additional vessel, designated 0051PQR, which was neither previously recorded nor identified during remote sensing. Researchers recorded the vessel remains in detail and determined it to be a small chine log barge. The hull remains of 0051PQR were limited to lower side strakes, chine, stringers, and bottom strakes, all of which were located underneath the overhanging west bank of Machelhe Island. The length of remaining timbers is 40.45 ft. (12.33 m) with an overall breadth of 21.10 ft. (6.34 m). This gives the barge a low 2:1 length to beam ratio. Most vessels investigated in the graveyard have length to beam ratios of 3:1 or higher, suggesting that this barge is either the tubbiest vessel in the complex or up to one third of the barge's original length is gone. The barge has edge-joined sides, longitudinal bulkheads on top of stringers, un-raked square-ends, and a large chine supporting the connection point between sides and bottom (Figure 4.27).

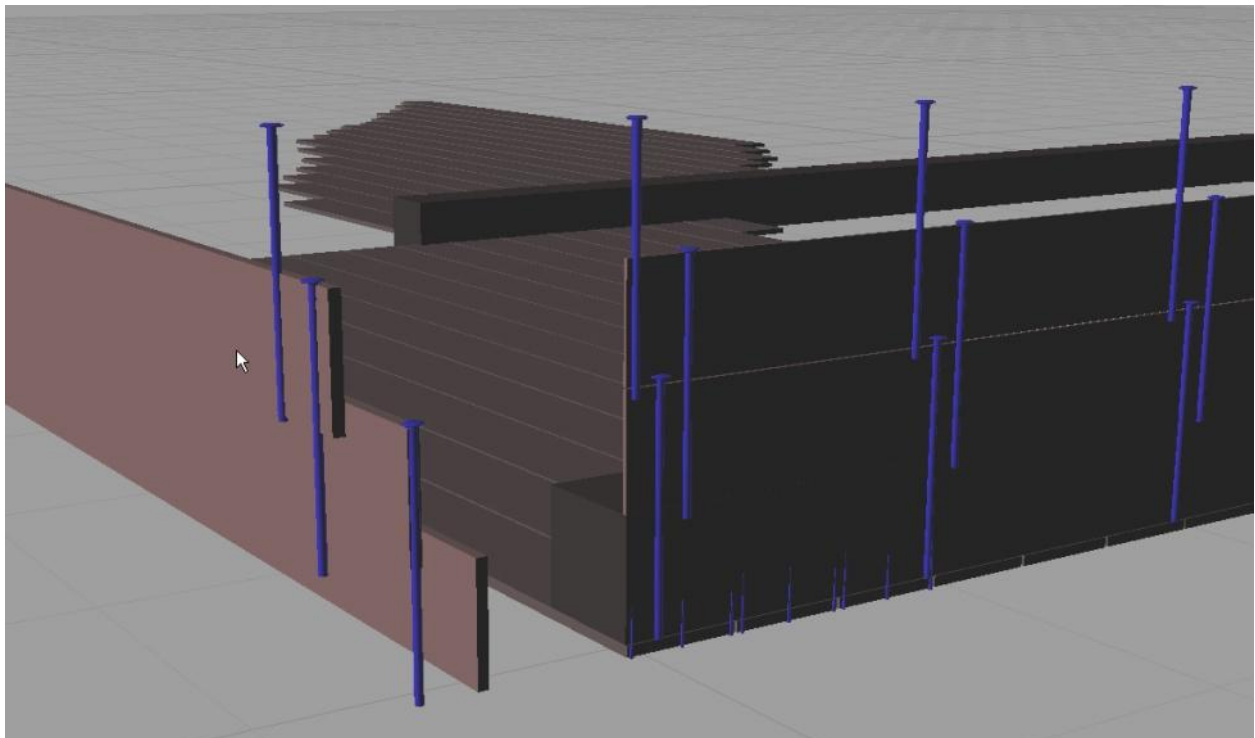


FIGURE 4.27. Isometric construction view of vessel 0051PQR (Campbell 2009:43). This is a simplified view of the remains focusing on the chine log's location. Fastener patterns are generalized and the longitudinal bulkheads are absent from the example stringer in the background.

The reconstruction of the barge's side (Figure 4.28) demonstrates the fastening pattern whereby the sides were edge joined with drifts securing a maximum of two planks with an alternating regular spacing of 1.48 ft. (45cm). Also visible in Figures 4.27 and 4.28 is the athwartships bottom planking, a characteristic commonly seen in traditional South Carolina flats or barges (Fleetwood 1995:312). Athwartships bottom planking was identified in vessel 0062PQR, a suspected flat, and 0016PQR, a barge similar to Chine Log Barge (0051PQR) but on a slightly larger scale. This distinctive construction characteristic suggests at least an exchange of construction ideas and traditions between North and South Carolina and at best demonstrates the geographical operating range for this type of watercraft.

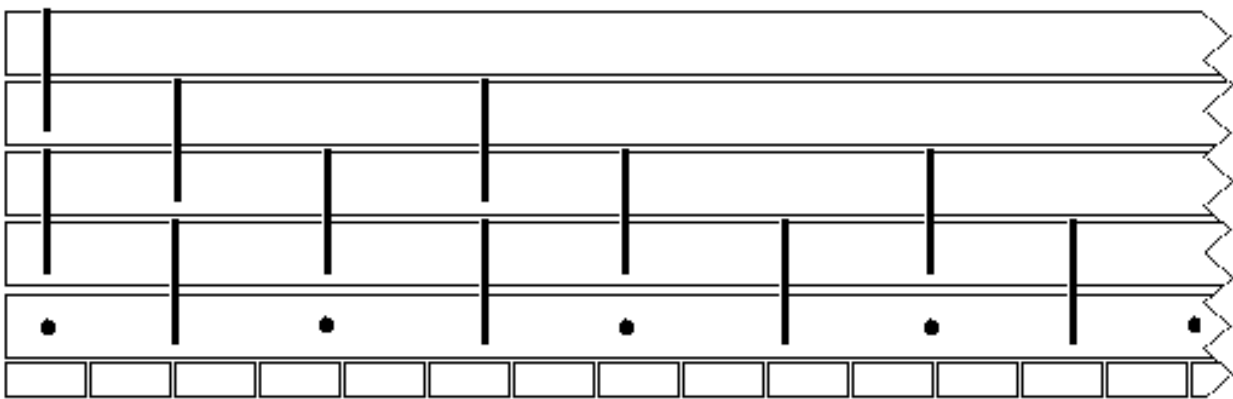


FIGURE 4.28. Reconstruction of 0051PQR's side construction and fastening pattern (Drawing by author 2020).

There is no indication of a barge or vessel wreck on the 1935 Army Corps map in the area where Chine Log Barge (0051PQR) is located, but vessel 0051PQR's location and construction correlate with two small barges recorded on Lemuel S. Blades III's 1946-1947 unmeasured sketch of abandoned vessels, 1015PQR and 1016PQR (Figures 3.3 and 4.25). It is likely that vessel 0052PQR is the same as vessel 1015PQR, the barge located closest to the shore of Machelhe Island. This correlation between the archaeological remains and historic records generates a window of 12 years, from 1935 to 1947, in which Chine Log Barge (0051PQR) was abandoned. The late-1950s river clean-up program was supposed to have removed all the vessels

from this area of the river, however, it is possible that the barge was preserved in the archaeological record by the encroaching underbrush, or was sufficiently submerged to be overlooked during the hulk removal.

Ground truthing the second side scan target, 0021, revealed site 0052PQR. Vessel 0052PQR is located adjacent and parallel to a row of degraded pilings. The remains are of a ferrous vessel 92.88 ft. (28.31 m) in length and 23.46 ft. (7.15 m) wide at the turn of the bilge. These measurements were taken off a much degraded hull consisting of a stem and stern post, bottom iron sheeting, and frames to the turn of the bilge on the starboard side. The vessel was more degraded on the river side where most destruction usually occurs due to wind and wave action as well as damage by strikings from other watercraft. On the shore side, sufficient amount of the hull remained to identify two longitudinal stringers, possibly bilge stringers, and the iron plating to a height of 1.38 ft. (42 cm).

Lemuel S. Blades III (2009, pers. comm.) documented a number of vessels abandoned in the area where Ferrous Ship (0052PQR) was located, namely the *O.T. & Lloyd Jr.* (1010PQR), *Texaco 144* (1011PQR), *Lucile Ross* (1012PQR), and an assortment of other vessels of various sizes that were “too dangerous to go exploring on.” The *O.T. & Lloyd Jr.*, *Texaco 144*, and *Lucile Ross* can be safely ruled out because they were wooden ships and purported to be removed from the water in the late-1950s. The 1935 map contained five unidentified vessels abandoned in the area, vessels 1045PQR-1049PQR. It is likely that these vessels were the ones undocumented by Blades. Of the five vessels from the 1935 map, there are two of sufficient size to correlate with Ferrous Ship (0052PQR), 1046PQR and 1047PQR. Of the two vessels, 1047PQR is spatially closer to Ferrous Ship (0052PQR) and is the best candidate for a correlation. Without knowing whether these vessels were iron or wood it is impossible to definitively declare that Ferrous Ship

(0052PQR) and 1047PQR are synonymous, but there are mitigating factors that support the correlation and a suggested deposition range.

Ferrous Ship (0052PQR) could not have operated in the area and utilized the Dismal Swamp Canal prior to 1899 because it would not have fit through the canal's locks. This means that we know definitely that it was deposited sometime after 1899. Observations about the vessel's preservation contribute to narrowing the abandonment range. There are only two iron vessels in the ships' graveyard, Thompson's Wreck/Old Iron Barge (0001PQR/1050PQR) and Ferrous Ship (0052PQR). When comparing the condition of Ferrous Ship (0052PQR) to Thompson's Wreck/Old Iron Barge (0001PQR/1050PQR) there is a remarkable difference in preservation. Judging from the minimal remains of 0052PQR, it would be logical to state that the vessel has been in the river longer than 0001PQR/1050PQR, or prior to 1947. If this is the case, why did Blades overlook such a large vessel in his unmeasured sketch and why was it not removed from the river during the late-1950s clean up? This author believes the answer to both of those questions lies in the condition of the vessel.

Mr. Blades was mainly interested in vessels that had artifacts or metal to scavenge and he admits that there were additional vessels in the area that were "too dangerous to go exploring on." If you consider the possibility that Ferrous Ship (0052PQR) is either 1046PQR or 1047PQR, it would have been in the water for a minimum of 12 years when Blades was creating his wreck map. If you consider the earliest deposition date of 1899, the vessel would have been in the water for almost 50 years. In either case, the vessel would have been stripped of anything valuable through c- or n-transforms by the time Blades made his map. This would explain why Blades did not mention vessel 0052PQR by description or name but merely grouped it in with other "un-explorables" ships. Similarly, by the late-1950s hulk removal, Ferrous Ship (0052PQR)

would have been further degraded and at least partially submerged. It is possible that a vessel in this state could have been overlooked during the hulk removal. Ferrous Ship's (0052PQR) position close to shore may have also saved it from removal from the river in the late-1950s. Additionally, little remains of the vessel's hull today. It is possible that only part of the vessel was removed or salvaged during the late-1950s hulk removal program. As seen with the Chine Log Barge (0051PQR) and Cement Barge (0072PQR/104PQR/1052PQR), not every ship was completely removed from the river in the late-1950s.

The other alternative would be if 0052PQR was deposited after the late-1950s hulk removal. If this is the case, why is the hull in such an advanced stage of deterioration when compared to 0001PQR? At this time, the most plausible scenario for 0052PQR is that it was abandoned prior to 1935 and is either vessel 1046PQR or 1047PQR on the 1935 Army Corps map and the vessel was overlooked by Blades and failed to be removed from the river because of its condition and location. More information about 0052PQR is needed before the deposition range can be narrowed from 1899-1935 or before any definitive statements about its specific identity can be made.

Lemuel S. Blades III' (2009, pers. comm.) unmeasured sketch and journals from the late 1940s identified at least 16 abandoned vessels in the area just north of the U.S. 158 bridge on the Camden County side of the river. It has been determined that two of these vessels' remains still lie in the river, 0052PQR/1015PQR, a small chine built barge and 072PQR/1044PQR/1052PQR, a Concrete Barge. The rest of the ships were reportedly removed during the late-1950s river clean-up program. Blades recalled some of the vessels by name, such as *Chelsea* (1013PQR), *Clarence A. Holland* (1009PQR), *Lucile Ross* (1012PQR), *Texaco 144* (1011PQR), and *O.T. & Lloyd Jr.* (1010PQR), and was able to provide accompanying photographs and details of their

functions, abandonment dates, or condition during the late 1940s. Other vessels were merely noted by location and type, such as Old Barge (1018PQR), Barge Hull (1017PQR), and Unnamed Vessel (1051PQR). The other four the vessels Blades mentioned with no associated description or location, one of which, as previously discussed, is believed to be vessel 0052PQR/1047PQR.

Clarence A. Holland (1009PQR) was a Chesapeake Bay Ram similar to *Thomas J. Shryock* (1001PQR) abandoned on the south side of Machelhe Island in Group Three. *Holland* was a three masted centerboard schooner built in 1893 in Bethel, Delaware, by J. M. C. Moore (Department of Commerce, Bureau of Navigation 1894:43; Burgess 1975:178). The “Ram” designed sailing ship with its “bluff bow, simple lines, wall sides, centerboard, [and] flat bottom...was little more than a barge with sails” (Burgess 1963:112). *Clarence A. Holland* sailed into Elizabeth City in the spring of 1944 and anchored parallel to shore, just north of the U.S. 158 bridge with its bow facing downriver (Figure 4.29) (Lemuel S. Blades III 2009, pers. comm.).



FIGURE 4.29. View looking northeast at the bridge crossing the Pasquotank River from Elizabeth City to Machelhe Island. *Clarence A. Holland* lies in the background north of the bridge (Burgess 1975:170, annotations by author).

Clarence A. Holland's homeport was changed from Chrisfield, Maryland, to Elizabeth City, North Carolina in 1942 and remained so until 1949, the last year the vessel appeared in *Merchant Vessels of the United States* (Department of Commerce, Bureau of Navigation 1942-1949). The 1945 edition of *Merchant Vessels* reflects a change of ownership to J.J. Wilkinson. It is likely that Wilkinson, the owner of "some sort of marine salvage and towing operation," bought *Clarence A. Holland* some time in 1944 and moored it on the east bank of the Pasquotank River above the U.S. 158 bridge (Basnight 2006:1). *Clarence A. Holland* joined the Concrete Barge (0072PQR/1044PQR/1052PQR), *Lucile Ross* (1012PQR), and an elegant *Hattie Creef*-style cargo ship already abandoned in the graveyard, which is likely the *O. T. & Lloyd Jr.* (1010PQR) (Lemuel S. Blades III 2009, pers. comm.).

By 28 September 1944, two eleven year old local boys were scavenging scrap iron to sell and rope and blocks for souvenirs off *Clarence A. Holland* and *Chelsea* (1013PQR), a large wooden vessel abandoned riverside of the *Holland* some time during the summer of 1944. A Sea Scout present on *Holland's* last voyage in May 1944 recalls the removal of the vessel's three masts some years after the abandonment because of their potential to create navigational hazards, this was completed before the 1950 photograph (Figure 4.30) (Lemuel S. Blades III 2009, pers. comm.). The ship's use as a Sea Scout training vessel is the only positively identified case of repurposing for a secondary function during a vessel's life-cycle in the Elizabeth City Ships' Graveyard.

Throughout the 1940s and early-1950s, vessels were steadily added to the abandonment complex (Figure 4.31). The 1935 map demonstrates the establishment of a ships' graveyard, these continuous additions to the cluster further supports Schiffer's ideas regarding the



FIGURE 4.30. *Clarence A. Holland* (1009PQR) on the left and *Chelsea* (1013PQR) on the right in a 1950 photograph (Burgess 1975:181).

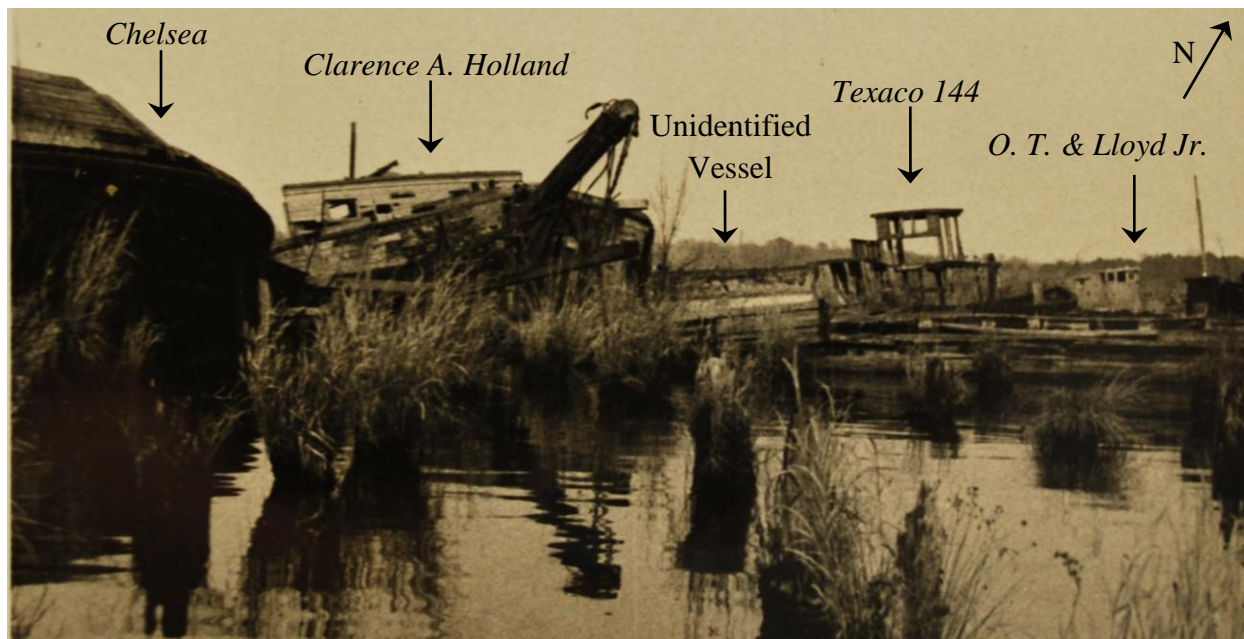


FIGURE 4.31. From left to right: *Chelsea* (1013PQR), *Clarence A. Holland* (1009PQR), Unidentified Vessel (1051PQR), *Texaco 144* (1011PQR), and *O.T. & Lloyd Jr.* (1010PQR) looking north up the Pasquotank River from the northwest shore of Machelhe Island in February 1954 (Lemuel S. Blades III Collection, annotations by author).

accumulation of discarded materials. Little is known about *Texaco 144* (1011PQR) but what Blades mistakenly thought was a metal deck in his youth, he later realized was the metal oil tank still in the hull. This lack of salvage could mean that the owners planned on returning for the vessel to reuse it, that they were going to salvage the tank later, or that the expense of removing the tank exceeded the economic gain from salvaging it.

Evaluating the post-depositional additive and reductive processes revealed that the only conservation processes in the entire abandonment complex appear in this cluster of vessels. Blades and his friends removed artifacts from *Clarence A. Holland* (1009PQR), *Lucile Ross* (1012PQR), and other vessels for decoration and preservation (Lemuel S. Blades III 2009, pers. comm.). This was both scavenging and conservation. Blocks, deadeyes, signal flags, and name plaques were just some of the artifacts removed during the 1940s, some of which remain in Mr. Blades' possession today (Figure 4.32). Blades also admits that he and his friends also scavenged scrap metal and lines off these ships for money.



FIGURE 4.32. Block scavenged and conserved from the *Clarence A. Holland* (Lemuel S. Blades III Collection).

Lucile Ross (1012PQR) was a wooden steam screw tugboat built in 1893, by Brewster Shipbuilding Company in Baltimore, Maryland, for Richmond Cedar Works operating out of Richmond, Virginia (Department of the Treasury 1895:325, Department of Commerce, Bureau of Navigation 1922:125). The Navy acquired *Lucile Ross* according to charter 17 in April 1917 and placed the tugboat, designated SP-1211, into service in Norfolk, Virginia, for the duration of WWI (Figure 4.33). After serving for two years as a shore and harbor patrol boat, supply boat for coastal lighthouse ships, and providing towing services for Army Transports *Lucile Ross* was returned to Richmond Cedar Works on 3 June 1919 (Department of the Navy 2009:1).

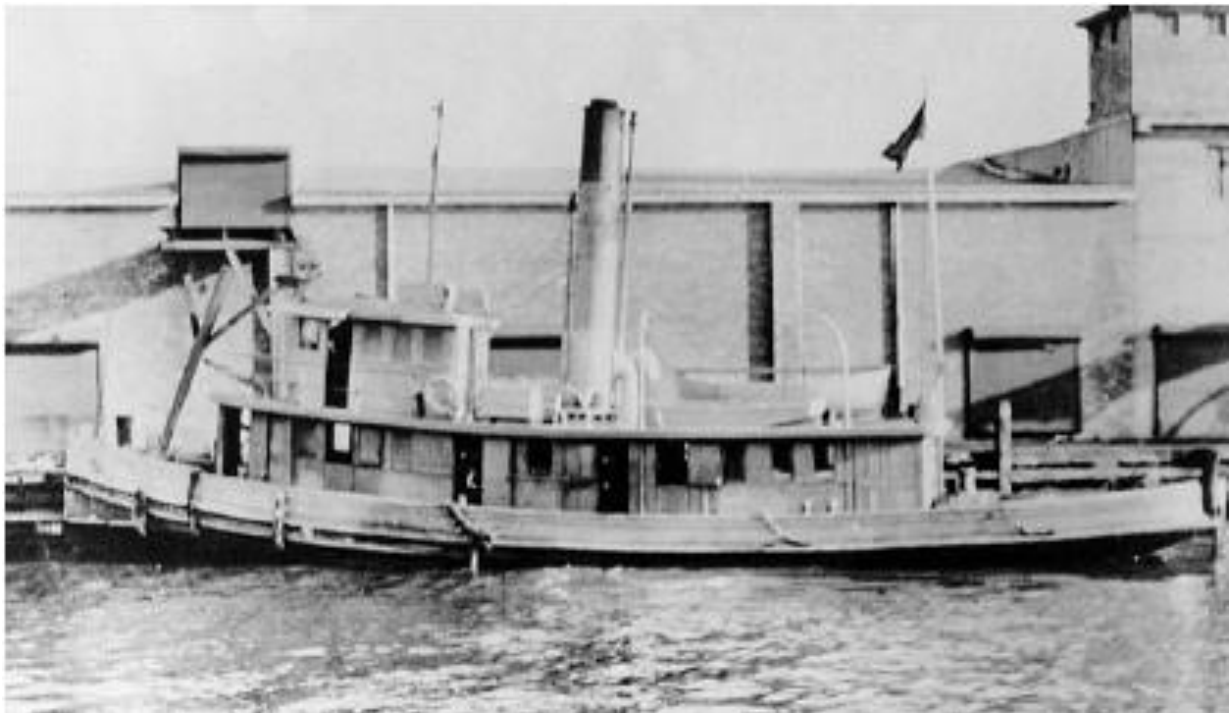


FIGURE 4.33. *Lucile Ross* during Naval service 1917-1919 (Department of the Navy 1918).

There is conflicting information, however, concerning the final resting place of *Lucile Ross* (1012PQR). Lemuel S. Blades III (2009, pers. comm.) stated that, in 1944, the *Clarence A. Holland* (1009PQR) joined a tugboat named *Lucile Ross* that was already abandoned in the cluster of vessels north of the U.S. 158 bridge. Additionally, Mr. Blades initiated the 2009 interview with this author by showing off the brass kerosene mast lantern he had scavenged from

the *Lucile Ross* (1012PQR). Based on Blades' pictures, journal, memory, and scavenged lantern, this places the tugboat in the Elizabeth City Ships' Graveyard during the 1940s. Franklin Price (2006:72), in his master's thesis "Conflict and Commerce: Maritime Archaeological Site Distribution as Cultural Change on the Roanoke River, North Carolina," states that the 1893 Baltimore-built oil-screw tugboat *Lucille Ross* burned and sank in the Roanoke River on 4 April 1950. What Price's thesis does not state is whether *Lucille Ross* was an active vessel or a hulk. It is possible that the tugboat 1012PQR was removed from the Elizabeth City abandonment complex sometime after 1947 and moved to the Roanoke River where it burned and sank.

A photograph of the abandonment complex in 1954 supports the hypothesis that *Lucile Ross* (1012PQR) was removed from the river (Figure 4.31). According to Lemuel S. Blades III (2009, pers. comm.), *Lucile Ross* (1012PQR) was positioned between *Texaco 144* (1011PQR) and *Clarence A. Holland* (1009PQR). Examination of the 1954 photograph verifies that the tugboat is not situated between *Texaco 144* (1011PQR) and *Clarence A. Holland* (1009PQR), an unidentified vessel (1051PQR) that does not correlate with *Lucile Ross*' (1012PQR) construction is the only vessel there. An alternate view of the same location (Figure 4.34) further illustrates the structural incompatibility of Unidentified Vessel (1051PQR) being tugboat *Lucile Ross* (1012PQR). When compared to the continuous sheer of *Lucile Ross*' (1012PQR) bow in Figure 4.33, the stepped bow of Unidentified Vessel (1051PQR) supports the theory that this is not the remains of *Lucile Ross* (1012PQR).

It should be stated that there is a possibility that Mr. Blades was mistaken in the identity of *Lucile Ross*, however that is unlikely as he had to board the tug in order to remove the mast lantern. There is also the possibility that there was two tugboats, one named *Lucile Ross* (1012PQR) that was abandoned in the Pasquotank River, and the other named *Lucille Ross*

which burned and sunk in the Roanoke River. This scenario also seems unlikely as research in the *Annual List of the Merchant Vessels of the United States* lists only one *Lucile Ross* during the years in question. Without any further information, the best hypothesis is that *Lucile Ross* (1012PQR) was in the Elizabeth City Ships' Graveyard some time during the 1940s, during which time Lemuel S. Blades III scavenged artifacts and noted its location on a 1946-1947 unmeasured sketch, and then the vessel burned and sank in the Roanoke River in 1950. More information is needed to solve the mystery of the tugboat and accurately chronicle *Lucile Ross*' (1012PQR) entire life-cycle.



FIGURE 4.34. Unidentified Vessel (1051PQR) between *Clarence A. Holland* (1009PQR) and the west bank or Machelhe Island (Lemuel S. Blades III Collection, annotations by author).

O.T. & Lloyd Jr. (1010PQR) was built locally by George Washington Creef of Nags Head, North Carolina, and owned and operated by the Globe Fish Company (Coastal Guide 2010:1). The Globe Fish Company operated from a warehouse directly across the river from *O.T. & Lloyd Jr.*'s abandonment site suggesting that the vessel was abandoned within its primary area function (Jennette Brothers 2007:1). Blades took the photographs in Figure 4.35 from the Jennette Brothers docks on the west bank of the river showing *O.T. & Lloyd Jr.*'s condition six years after its abandonment around 1948. This ship would be the best candidate for correlation

with Ferrous Ship (0052PQR), due to its precise location and orientation, but it is at least 60 ft. too short, there is no documentation demonstrating *O.T. & Lloyd Jr.* (1010PQR) was a composite built ship, and George Creef was only known for wooden boat building, not composite wood and metal ships. June 2009 side scan revealed no material remains in the river where *O.T. & Lloyd Jr.* (1010PQR) was located suggesting that this was one of the vessels entirely removed during the late-1950s river clean-up.

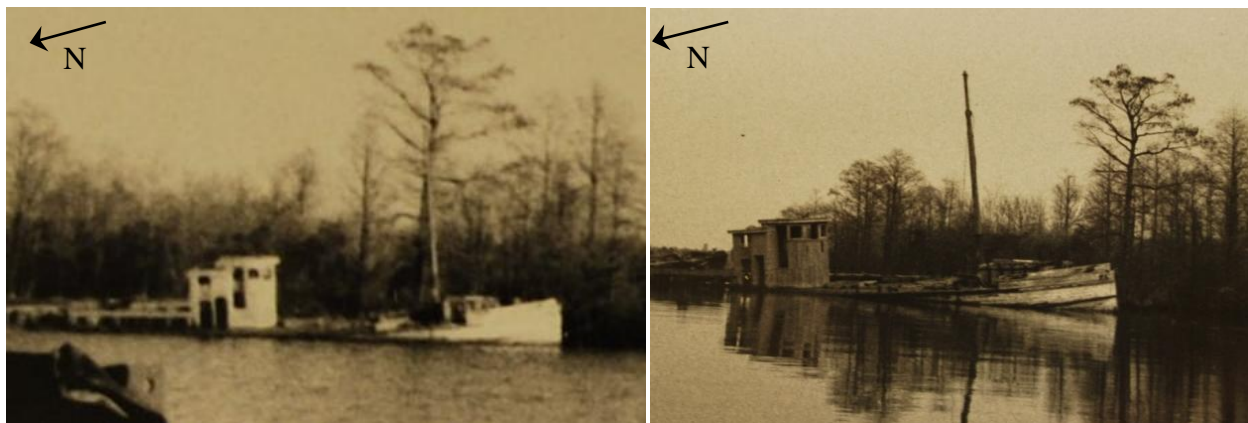


FIGURE 4.35. *O.T. & Lloyd Jr.*'s (1010PQR) condition on 1 January 1954 (left) and February 1954 (right) (Lemuel S. Blades III Collection, annotations by author). The photo was taken from the downtown Elizabeth City waterfront looking east towards Machelhe Island's west bank just north of the U.S. 158 bridge.

Group Five

Group Five is comprised of 20 historic and archaeological vessels (Figure 4.36). Twelve of the vessels were previously recorded, seven vessels were located in the historic record, and one ship was recently located. Of the 20 vessels in this cluster, 6 of them, 0002PQR-0005PQR, 0007PQR, and 0008PQR, are identical in size and construction. Vessels 0010PQR, 0011PQR, 0012PQR, and 0013PQR share a similar size but not construction style or function, however, 0012PQR is no longer identifiable in the archaeological record. Vessel 0053PQR is the only newly located ship in Group Five and represents the most recent vessel abandoned in the Elizabeth City Ships' Graveyard. Correlations between extant remains in the river and vessels in the historical record will be addressed on an individual basis in the group.

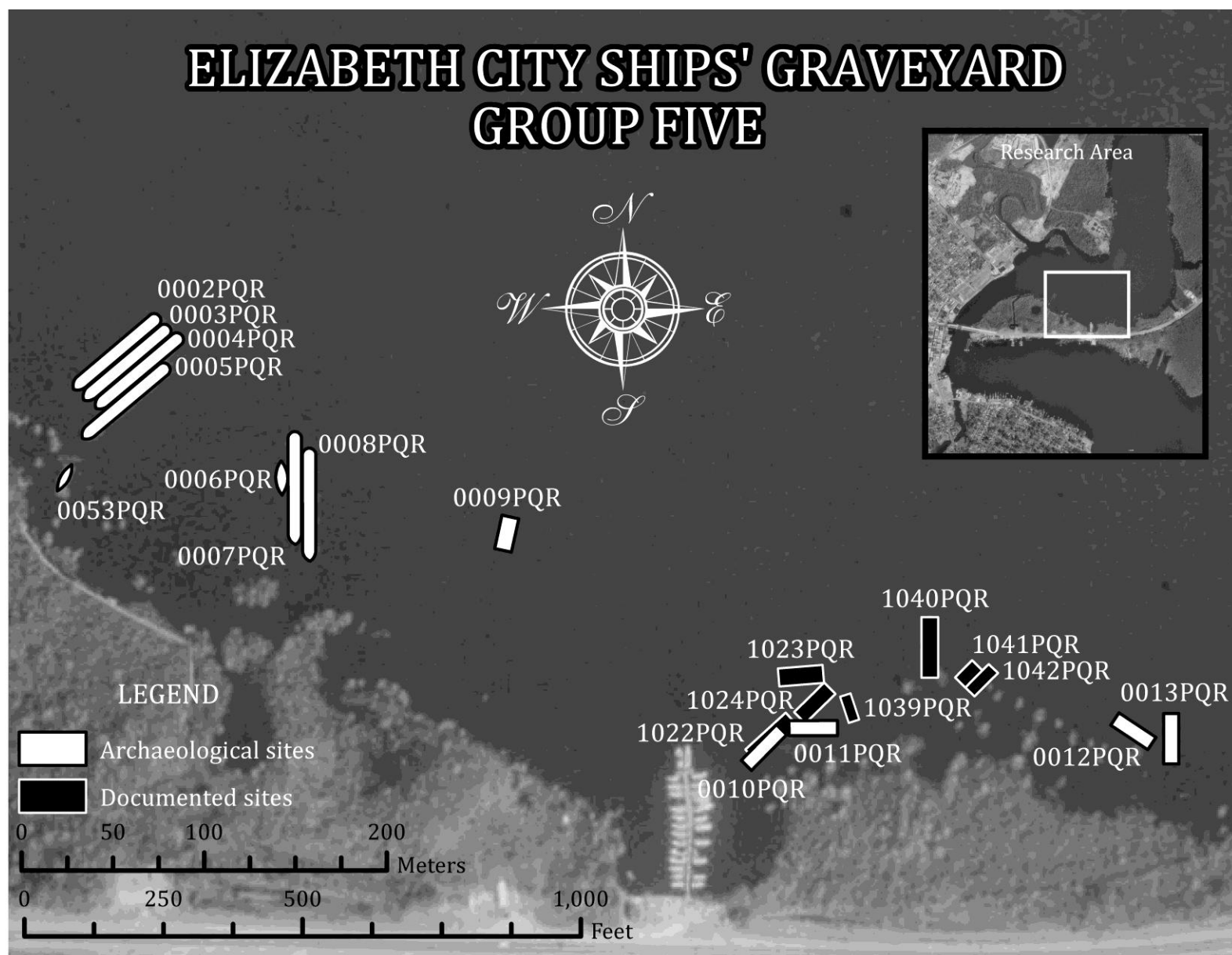


FIGURE 4.36. Twelve vessels make up Group 5 including twelve known ships, one newly locate vessel (Courtesy of Google Earth 2009).

Vessel 0053PQR was initially located during the January 2009 visual survey and was recorded during the August 2009 fieldwork. The remains are wedged between a live Cyprus tree and a dead trunk between the cluster of four bay barges 0002PQR-0005PQR and Machelhe Island's north shore. Vessel 0053PQR did not appear in any of the previous archaeological reports, and was not visible in photographs taken during those surveys. The bow of the vessel is partially exposed and consists of the stempost, some dilapidated side strakes, and an athwartships interior brace to reinforce the bow. Modern construction materials were used in the hull including machine cut fasteners, milled lumber, and marine plywood, fiberglass, and what appears to be a large iron boiler towards the stern of the vessel. Because the stern of the ship extended into water with a depth in excess of eight feet, and the bottom of the hull is buried deep in the mud, accurate length and depth measurements were not obtained. The strakes and sides of the vessel disappear a few feet aft of the bow so an accurate width was not determined either.

Vessel 0053PQR was added to the established vessel cluster on the north shore of Machelhe Island. This behavior correlates with repeated behavior seen throughout the graveyard where people discard materials where a precedent has already been set. Vessel 0053PQR's deposition location between a live Cyprus and a dead Cyprus trunk and between the bay barge cluster and Machelhe Island suggests the vessel was abandoned with placement assurance in mind. The recent nature of the deposition and the advanced deterioration of the hull suggest that there was some form of hull minimization prior to or during abandonment, however, burning was not observed on the remaining hull structure. The stern was beyond the depths for free diving so it was not determined if the engine was still inside the hull, but the presence of the boiler just forward of where the engine should be suggests minimal metal salvage or scavenging occurred. With so little of the hull remaining it is impossible to state with any accuracy what the vessel's

use was, nor can it be determined if there was any modifications that resulted in a secondary function prior to deposition.

Lawrence and Wilde-Ramsing of the NCUAB first recorded vessels 0002PQR-0005PQR, 0007PQR, and 0008PQR in 1985 during a cursory river survey. They observed that these six vessels were all abandoned with their pointed bows facing the northwest shore of Machelhe Island and rounded sterns towards the open water of the river. Lawrence and Wilde-Ramsing identified the ships as long, narrow, wooden canal barges that exhibited double diagonal interior planking, steering mechanisms, and both wood and metal fasteners. Evidence of burning was still present on a number of the vessels in 1985 despite advanced deterioration, and Wilde-Ramsing (1985:1) stated that the vessels were structurally intact and well exposed at all times.

Students of Dr. Richards' Field Methods class completed further recording on 0002PQR-0005PQR, 0007PQR, and 0008PQR in March 2009. Photographs taken during this fieldwork illustrate the amount of deterioration that has occurred over the past 24 years (Figure 4.37) such as the loss of decking and increased wear on upper timbers. Side scan images from June 2009 demonstrated further deterioration in the flayed bows and sterns of some vessels, which differs from the Wilde-Ramsing's 1985 structurally intact description. The March 2009 fieldwork also produced individual site plans for 002PQR-0005PQR, 0007PQR, and 0008PQR (Figure 4.38).



FIGURE 4.37. Vessels 0008PQR and 0007PQR as photographed in 1985 (left) and in 2009 (right) (Photographs courtesy of NCUAB (left) and Nathan Richards (right), annotations by author).

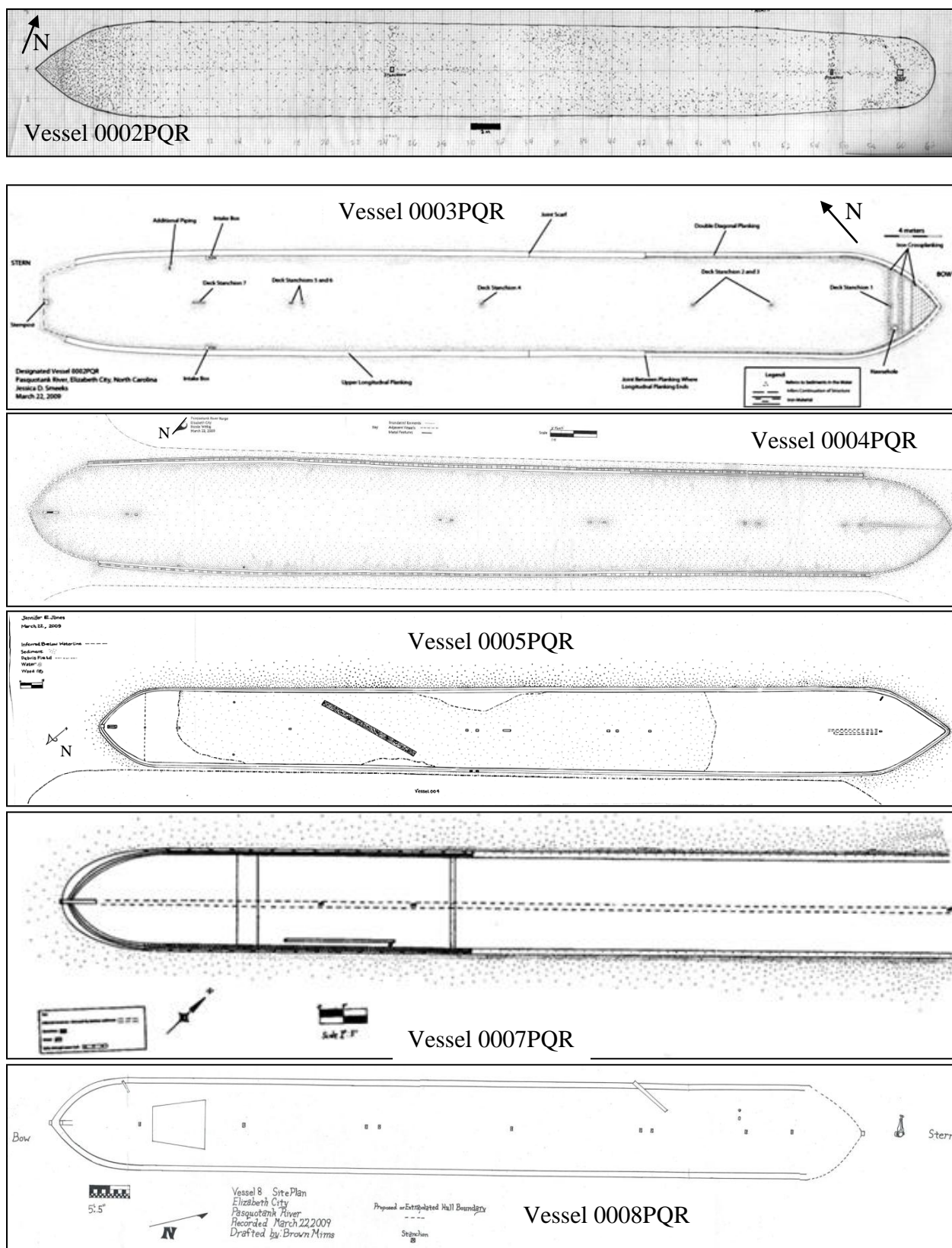


FIGURE 4.38. 2009 Site plans of vessels 0002PQR (Caudell 2009), 0003PQR (Smeeks 2009), 0004PQR (Wittig 2009), 0005PQR (Jones 2009), 0007PQR (Dilk 2009), and 0008PQR (Mims 2009) (Annotations by author).

Elizabeth City was heavily involved in the lumber industry throughout the second half of the 19th and first half of the 20th centuries. Vessels 0002PQR-0005PQR, 0007PQR, and 0008PQR were built as combination inland and ocean-going barges. The double diagonal interior planking provided the necessary longitudinal strength and hull toughness needed to combat open water conditions while the narrow hull allowed these barges to operate in the Dismal Swamp Canal and Albemarle & Chesapeake Canal. These barges were not self-propelled; however, they had steering mechanisms and sizable stern pilothouses as seen in Figure 4.39.

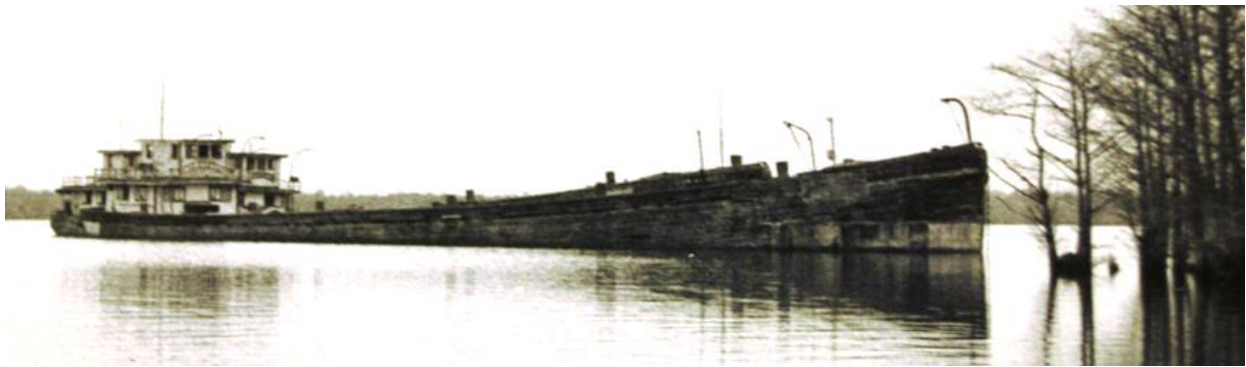


FIGURE 4.39. Vessels *Monocacy*, *Suwanne*, and *Kennebec* off the northwest coast of Machelhe Island (Lemuel S. Blades III Collection).

Vessels 0002PQR-0005PQR, 0007PQR, and 0008PQR cannot be positively identified at this time, but there are some possibilities for their identification. Lemuel S. Blades III (2009, pers. comm.) recalls that Captain Gregory, owner and operator of the barge *Monocacy* (seen in the foreground of Figure 4.39), temporarily moored the barge off Machelhe Island around 1950 with the intention of removing the vessel at a later date. Captain Gregory filed a libel suit in 1949 against C.G. Willis, owner of the tug *Evelyn*, for damages to barges *Monocacy* and *Tuckahoe* citing “negligent operation of the *Evelyn* in proceeding in the Intracoastal Waterway” with barges in tow (Maritime Law Association of the United States 1949:24). Blades claims that his father was Captain Gregory’s attorney in an attempt to remove liens held by a bank in Baltimore Maryland. Blades also claims that the admiralty proceedings were a larger expense than Captain

Gregory wished to invest so he abandoned the *Monocacy*, *Suwannee*, and *Kennebec* near Machelhe Island. It is unclear at this point which legal battle resulted in the abandonment of *Monocacy*, if that was indeed the reason for *Monocacy* ending up derelict in the Pasquotank River. Additionally, there is no telling which of the six vessels in the river can claim the identification of *Monocacy*. If the 1954 photographs in Figures 4.39 and 4.40 are an indication of the final resting place of these vessels, then it would be fairly safe to claim that three of the four vessels in the 0002PQR-0005PQR cluster are the *Monocacy*, *Suwannee*, and *Kennebec* with an unknown vessel as the fourth barge in the group. While this is the most likely theory, there are problems with this hypothesis.

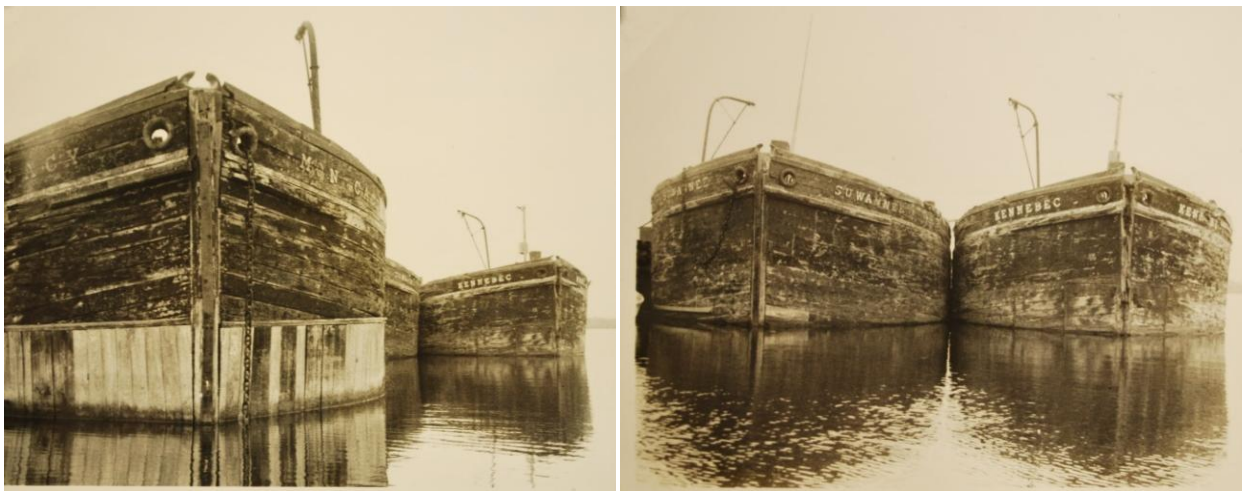


FIGURE 4.40. The positions of *Monocacy*, *Suwannee*, and *Kennebec* as photographed III in February 1954 (Lemuel S. Blades III Collection).

The orientation pattern seen in the two 1954 photographs, where the western most vessel is substantially closer to shore than the two that are completely parallel, does not exist in the graveyard today. Vessels 0007PQR and 008PQR are staggered, and the cluster of vessels 0002PQR-005PQR is comprised of three parallel vessels and the fourth eastern most vessel significantly closer to shore than the other three (Figure 4.36). There are four possible explanations for the disagreement between the historical and archaeological records. Hypothesis

one involves the relocation of *Suwannee* and *Kennebec*, by either human interaction or environmental forces, further east in the river to create the staggered 0007PQR-0008PQR cluster. This option is viable because, as Figure 4.40 shows, *Suwannee* and *Kennebec* were not anchored in place while *Monocacy* was. Hypothesis two suggests that either c- or n- transforms could have moved any of the three barges *Monocacy*, *Suwannee*, or *Kennebec* into the orientation seen in the archaeological record between 1954 when the photographs were taken and 1985 when they were first recorded archaeologically. The variety of severe weather that affects North Carolina's eastern seaboard each year makes this hypothesis feasible, especially when combined with the fact that two of the three vessels were not securely anchored in place. Less likely but still possible, hypothesis three maintains that *Suwannee* and *Kennebec* were still operational in the 1954 photographs, and that they were abandoned in a viable orientation after the 1954 photographs were taken. The final and least likely situation, hypothesis four, would be if *Suwannee* and *Kennebec* were still active vessels in the 1954 photographs and were never abandoned in the river at Elizabeth City. Analysis of the photographs and archaeological evidence suggests to this author that hypothesis two is the most likely explanation for the discrepancies between the historical and archaeological records. In all four of the hypotheses, additional bay barges would have been deposited in the complex to create the spatial relationships seen today among 0002PQR-0005PQR, 0007PQR, and 0008PQR.

It can be stated with certainty, however, that *Monocacy* is one of the six bay barges in the river because it, along with the bay barge *Pensacola*, burned to the waterline in 1956 (Berman 1956:3,322). This decreases the number of bay barges to identify down to four. Elizabeth City resident and descendant of the Foreman and Blades lumber families Jeb Stuart (2009, elec. comm.) claims that the six bay barges in the Pasquotank River are the only remnants of the

Foreman-Gregory Company. The Foreman-Gregory Company was created from a partnership between Harold C. Foreman (Jeb Stuart's grandfather) and Captain J.P. Gregory and specialized in the transportation of milled lumber. While the Foreman-Gregory Company employed eight vessels at one time, Stuart (2009, elec. comm.) maintains that six of the eight bay barges were abandoned in the Pasquotank River. Based on family records, Stuart was able to provide the names of all eight bay barges employed by the Foreman-Gregory Company through the late-1940s; *Rodney* (ex-*Clinton*), *Rancocas*, *Saranac*, *Suwannee*, *Biscayne*, *Pensacola*, *Tampa*, and *Kennebec*. Photographic and historic documents definitively determined that *Monocacy* and *Pensacola* are in the abandonment complex, and they strongly suggest that *Suwannee* and *Kennebec* are two of the other bay barges in the graveyard. This leaves two vessels unidentified with four possible identities, *Rodney* (ex-*Clinton*), *Rancocas*, *Saranac*, *Biscayne*, or *Tampa*. Without further information, a positive identification is not possible for the remaining two bay barges abandoned in the graveyard.

Hull reduction via burning has been confirmed for *Monocacy* and *Pensacola* and is likely to have taken place on a number of the other hulls as well since a majority display charring (Wilde-Ramsing 1985:1). Salvage and scavenging removed the steering quadrants from all the vessels except 0008PQR which still retains a portion of the steering mechanism (Figure 4.37). It is possible that these vessels are in two clusters because the owners used previously abandoned vessels as anchors and placement assurance but without a more concrete timeline that hypothesis cannot be verified.

Abandoned throughout the 1950s, these vessels represent a spatial pattern influenced by two circumstances. Vessel size was likely the primary force that dictated their deposition location, a behavior thoroughly documented in Australian ships' graveyards where Richards

(2002:251-253) stated that “trade will define working location, and perceived threats to navigation will [define] abandonment location.” This statement references the spatial restraints within river systems that dictate where vessel deposition may occur without creating navigational hazards. These vessels, the largest in the Elizabeth City Ships’ Graveyard, are located further away from the city than a majority of the other vessels, in an area with the requisite space for six 200 ft. long vessels that is sufficiently removed from the active navigational channel.

Secondary motives may have stemmed from abandoning the vessels near the industries they served, a pattern seen in the Eagles Island Ships’ Graveyard (Seeb 2007:178). A majority of the vessels abandoned around Machelhe Island were involved with industries either on the island or downtown Elizabeth City. The lumber industries were located on the fringe of the town and therefore the abandonments were deposited further from the downtown area. The trend of depositing ships where there is already a discarded vessel continues with the bay barges, but in a less direct manner. Machelhe Island was already littered with ships along its south and west banks, so depositing the bay barges off the northern shore was a continuation of this concentration of abandonments.

Site 0006PQR is a small wooden boat completely submerged adjacent and parallel to the south side of 0007PQR (Figure 4.36). First located in 1985 by Lawrence and Wilde-Ramsing, 0006PQR was inspected again in August 2009. The vessel has a pointed bow, flat transom, with three raised hatches and a majority of the deck still in place. 006PQR has an overall length of 61.7 ft. (18.8 m), a width of 17.03 ft. (5.19 m), and a depth of hold over 6 ft.(1.83 m). The overhead environment prohibited researchers from investigating the interior of the boat.

Vessel 006PQR stands out in the graveyard as one of the smaller boats abandoned in the complex. The vessels is submerged ft. below the surface which limited the accessibility of the

hull for recording purposes. From the percentage that was recorded, it appears that this vessel is one of the few in the ships' graveyard that is not a barge. Additionally, the large amount of wiring found on the deck of 0006PQR suggests there was an electricity source on board and that this vessel is one of the few self-propelled boats in the complex. The degree of salvage on 0006PQR is unknown because investigators could not access the hold to determine the presence or absence of machinery, however, intact decks suggests minimum looting or salvage of material in the hold. Despite large amounts of wiring there were no electronics found during the August 2009 investigation, most likely because these would have been removed prior or shortly after abandonment to be reused in another vessel. Historical research has uncovered no reference to the identity or abandonment date of vessel 0006PQR, but the modern electric wiring found on the deck suggests a more modern vessel. Additionally, vessel 0006PQR was probably added to the previously established 0007PQR-0008PQR vessel cluster, thereby using the bay barges for placement assurance.

Lawrence and Wilde-Ramsing first identified site 0009PQR's location in 1985. Just northeast of the 0006PQR-0008PQR vessel cluster, 0009PQR was almost entirely submerged in 1985 with only a few wooden frames exposed to mark its location. Remote sensing relocated 0009PQR in 2009 as targets 0072 and 0088 (Figure 4.41). The side scan images reveal a double raked-ended barge. Investigators attempted to inspect this site in August 2009 but found the vessel inaccessible due to its excessive depth. Some timbers could be felt a few feet below the surface of the water, but the vessel lies on a slant where the river depth increases dramatically from approximately 9 feet to over 25 feet deep.

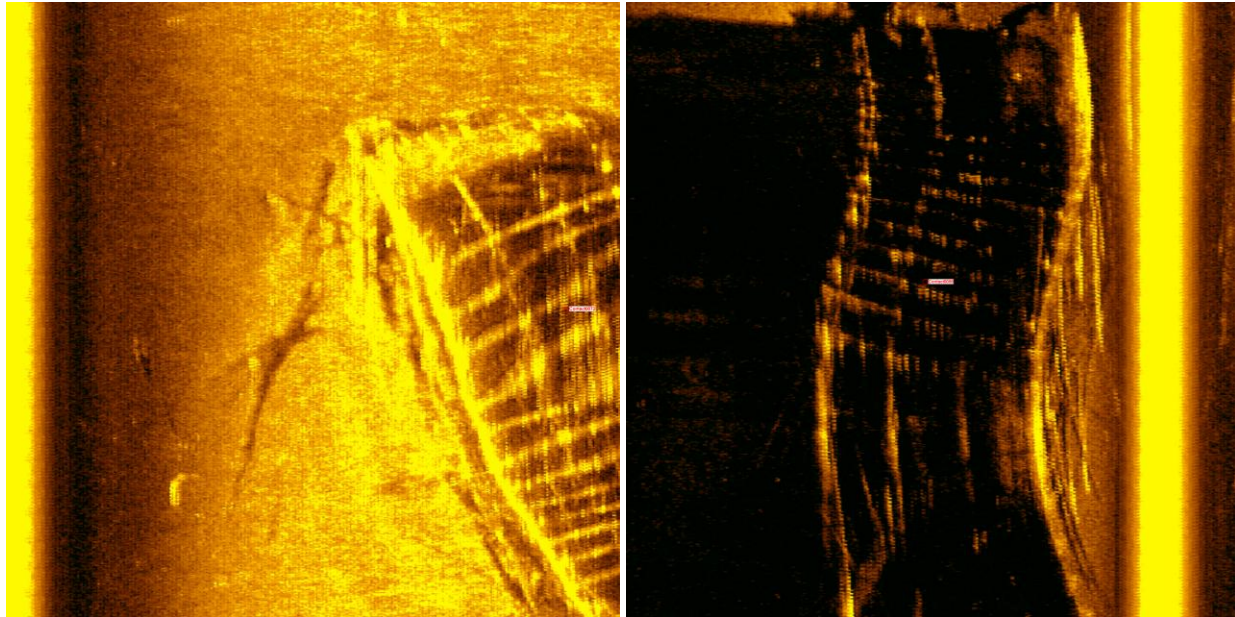


FIGURE 4.41. Remote sensing targets 0072, left, and 0088, right, illustrate site 0009PQR's relatively intact condition (Richards and Smith 2009:30,32).

Measurements taken from side scan images determined the vessel length to be at least 61.39 ft. (18.71 m) long and 30.77 ft. (9.38 m) wide giving this vessel a very small 2:1 length to beam ratio. The width data is more accurate than the length data for two reasons, one, vessel 0009PQR is skewed on the image because the boat operating the side scan was turning, and two, the extreme ends of the vessel have been cut off in the images. Similarly built vessels, rectangular barges with raked ends, straight sides, and longitudinal bulkheads such as 0010PQR and 0011PQR, have length to beam ratios of 3.4:1 and 3.3:1 respectively. It is likely that 0009PQR's actual length is closer to 90 or 100 ft., which would give it a more normal 3:1 length to beam ratio for vessels of this type. Additional archaeological investigation using SCUBA would be necessary to record more accurate dimensions, construction details, and abandonment signatures that would be useful for a positive identification or deposition date.

Lawrence and Wilde-Ramsing originally recorded site 0010PQR and 0011PQR's locations in 1985 along with two additional vessels in the area, 0012PQR and 013PQR. Only three of the four vessels identified in 1985 by Lawrence and Wilde-Ramsing remain in the river

today, vessels 0010PQR, 0011PQR and either vessel 0012PQR or 0013PQR. When compared to the accuracy of GPS positions, the 1985 site map (Figure 3.4) provides only generalized vessel locations for vessels 0010PQR-0013PQR and leaves room for error in identifying the correct vessel with the correct number. The June 2009 Side Scan Survey located a single target 0160 in the vicinity of historic vessels 0012PQR and 0013PQR. Spatial analysis of the historic 1935 map, previous archaeological site report and current archaeological data reveals that side scan target 0160 best corresponds with historic vessel 0013PQR's location, especially due to the large gap between vessel 0011PQR and itself. While the author recognizes the possibility that the extant remains in the river could be vessel 012PQR, for the purpose of this thesis the vessel remaining in the river at target 0160 will be identified as 0013PQR.

In 1985 Lawrence and Wilde-Ramsing identified 0010PQR-0013PQR as wooden square-end barges with typical edge fasteners. The four barges were located around Glover's Cut, an area that is now the Pasquotank River Yacht Club's Marina. While that description is accurate for vessels 0010PQR and 0011PQR, vessel 0013PQR is a different construction type. Revisited during the March 2009 fieldwork, students more thoroughly recorded the three remaining vessels, obtained accurate GPS coordinates, and created individual site plans for vessels 0010PQR, 0011PQR, and 0013PQR.

As Wilde-Ramsing (1985:1) stated, vessels 0010PQR and 0011PQR are in fact rectangular barges with raked ends, edge-fastened sides, and multiple transverse bulkheads (Figure 4.42). They exhibit "typical" length to beam ratios for vessel of this type, 3.3:1 and 3.4:1 respectively. The transverse bulkheads were standard for hauling bulk cargos such as grain or wood pulp, and because these barges had no means of propulsion or steering, they were towed by a tug with similarly constructed barges. This type of barge construction and size is not conducive

to operation in the open waters such as the Albemarle Sound or Atlantic Ocean so these barges probably plied the many canals along the eastern seaboard during the last quarter of the 19th century though the first quarter of the 20th century.

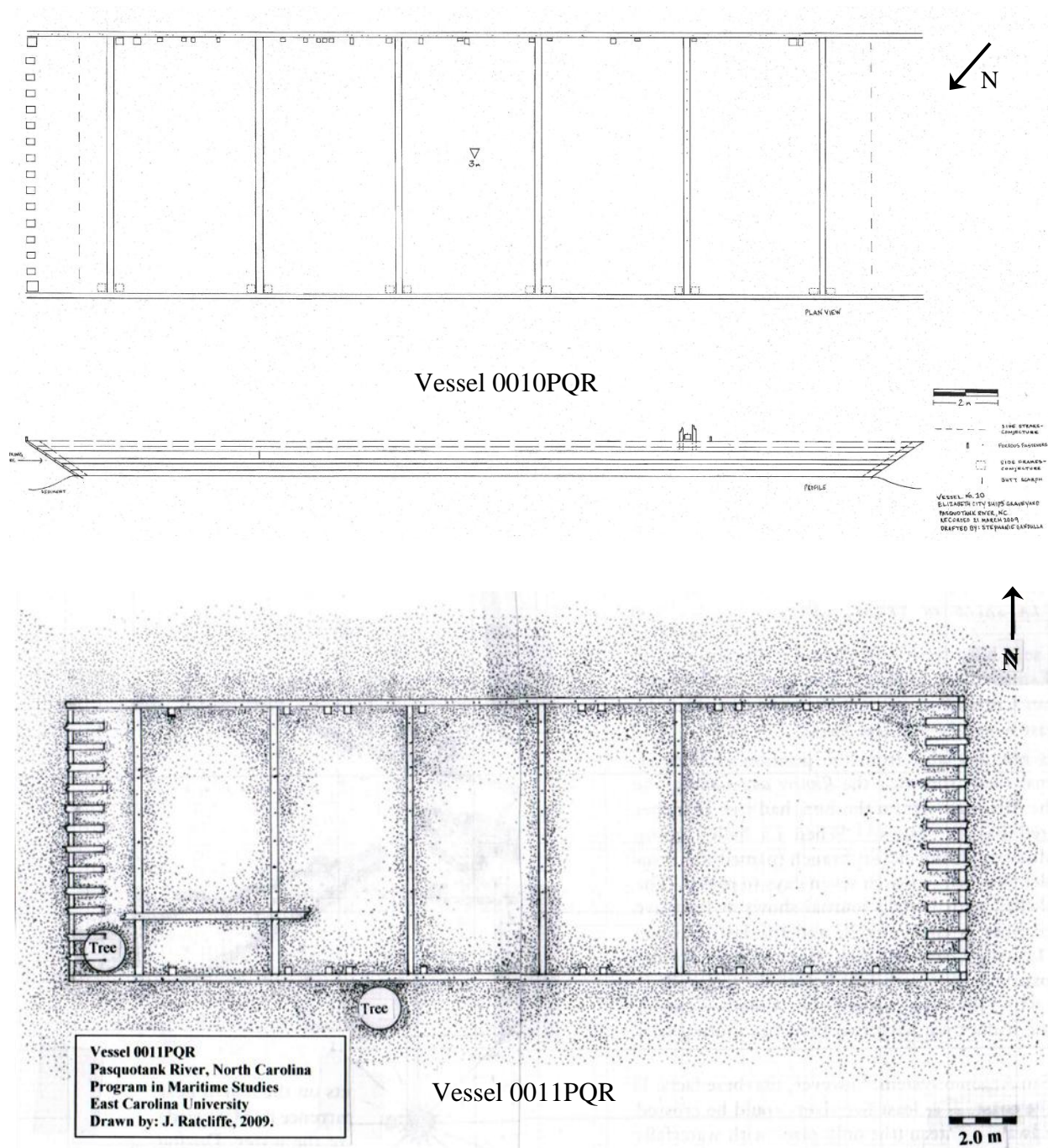


FIGURE 4.42. 2009 Site Plans for vessels 0010PQR (Gandulla 2009) and 0011PQR (Ratcliffe 2009) (Annotations by author).

Vessel 0013PQR differs from 0010PQR and 0011PQR's construction in that it has 'V' shaped interior timbers that suggest it was a Hopper Barge or Mud Scow (Figure 4.43). Vessel 0013PQR is 90.22 ft. (27.5 m) long and 27.13 ft. (8.27 m) wide giving the vessel a 3.3:1 length to beam ratio similar to 0010PQR and 0011PQR. Vessel 0013PQR has four extant traverse bulkheads with indications of a fifth. These bulkheads differ from those found in 0010PQR and 0011PQR because of the angled longitudinal timbers between them creating 'V' shaped pockets.

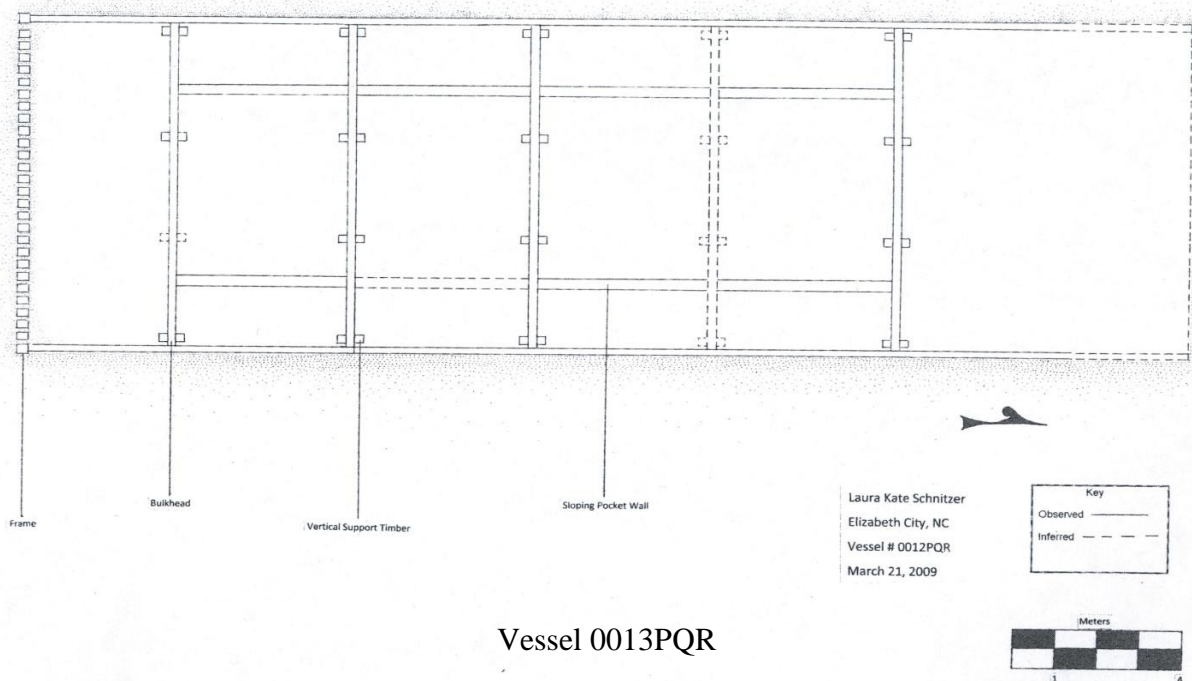


FIGURE 4.43. 2009 Site Plan of Hopper Barge (0013PQR) (Schnitzer 2009, annotations by author).

Hopper Barges or Mud Scows, terms that are often interchanged, are basically “a hull rectangular in plan and cross section, consisting of a number of independent hoppers called pockets, and with both ends raked or rounded (in elevation) for towing in either direction” (Figure 4.53) (Simon 1920:54). Vessel 0013PQR fits that description perfectly. The only aspects of a hopper barge missing from 0013PQR is the dumping machinery, possibly salvaged for scrap metal, and pocket coamings, located two to three ft. above the deck and therefore probably lost from environmental conditions (Simon 1920:54).

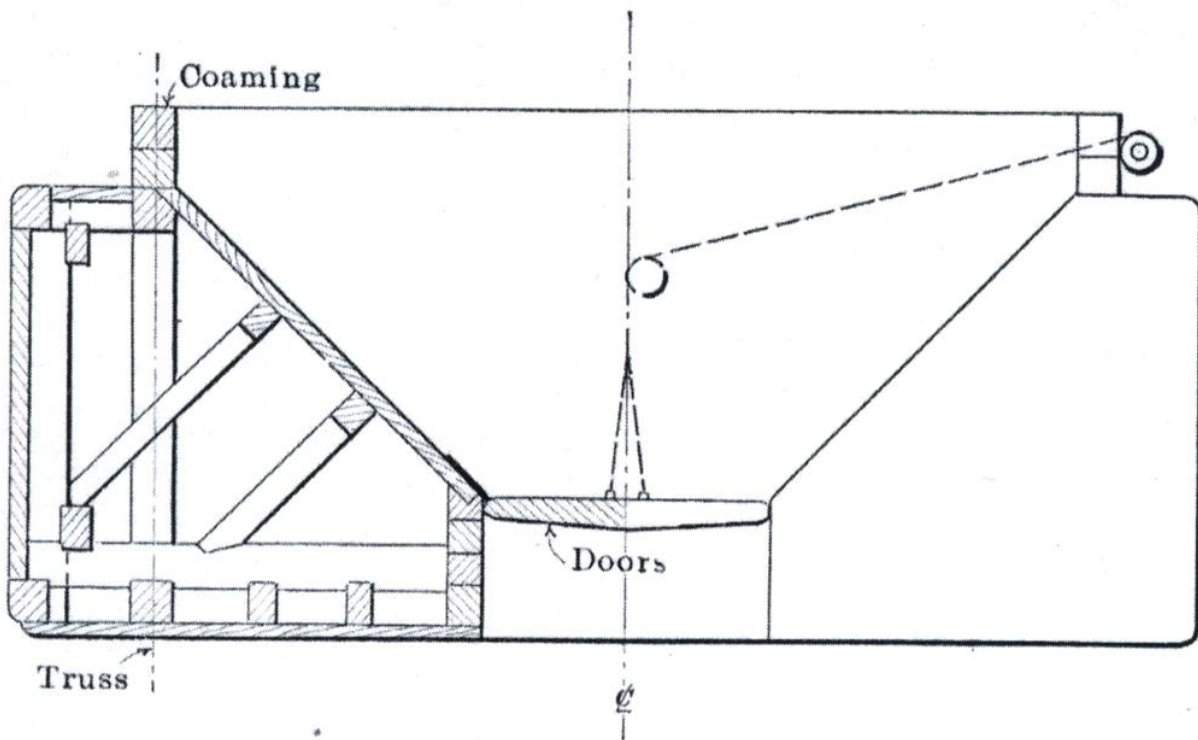


FIGURE 4.44. Cross Section of a Mud Scow-Hopper Barge (Simon 1920:55).

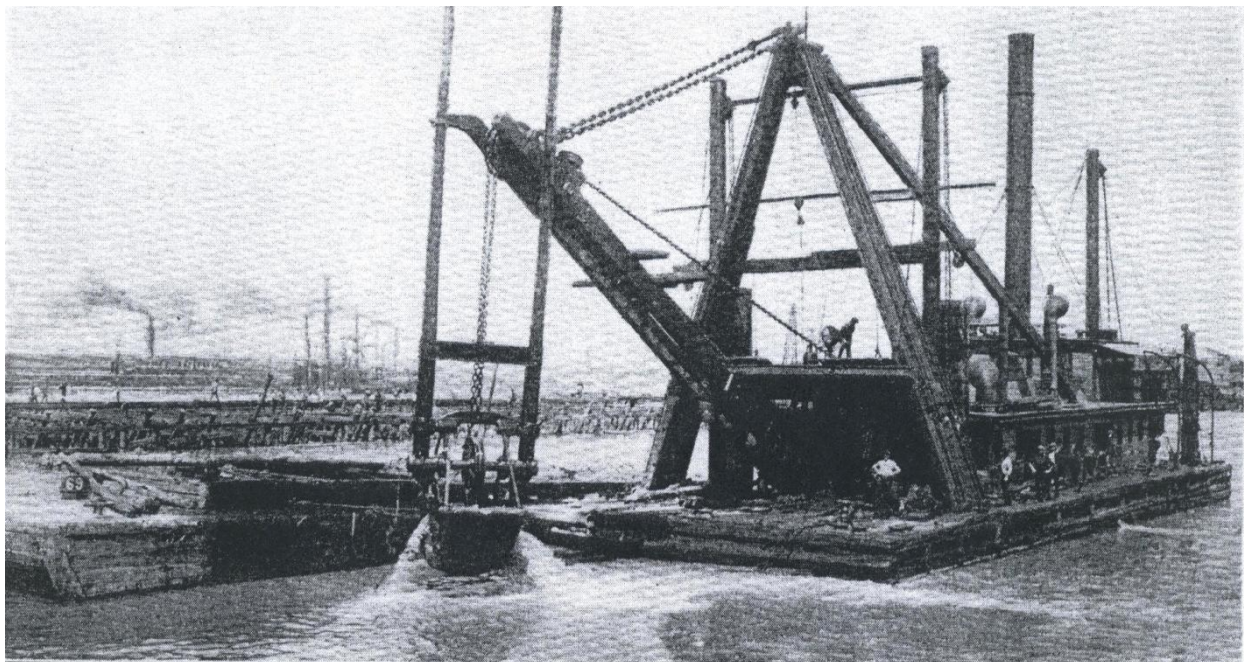


FIGURE 4.45. Dredge *Admiral* working with a Mud Scow (Simon 1920:v).

Vessel 0013PQR is not the only hopper barge in the graveyard however. Wilde-Ramsing (1985:5) described 0017PQR as a partially exposed wooden barge that is compartmentalized similar to the hopper barges found in Wilmington harbor. The presence of a second hopper barge in the river, vessel 0017PQR, and additional hopper barges further south in Wilmington, North Carolina, establishes a precedence of hopper barge use in North Carolina rivers.

Examining environmental site formation processes, the side of vessel 0013PQR exposed to the river shows the most deterioration, likely due to wind and wave action working on the exposed side more than the side protected by the shoreline. Vessel 0013PQR is wedged firmly between two Cyprus stumps. This can either be a post depositional n-transform or evidence of a c-transform in the guise of intentional place assurance by the abandoners.

Seven wrecks were identified through the historic record in the area around Glover's Cut, an area that is now the Pasquotank River Yacht Club's Marina (Figure 4.36). The spatial positioning of the historic vessels is not entirely accurate because of the 1935 map they were taken from but correlations can still be made between the historic and archaeological vessels. Vessels 0010PQR and 1022PQR are very likely the same vessel while 0011PQR bears similarities to 1024PQR. The eastern portion of the historic vessel cluster is where the correlations are more difficult to identify. Vessels 1040PQR and 0013PQR resemble each other in their orientation if not identically in their positions. Vessel 0012PQR is more difficult to correlate to an historic vessel because its position is estimated from the 1985 site plan, which gave neither direction nor orientation. It would be safe to state that 0012PQR and 1023PQR correspond to one another based on their relative size and the previous size correlations within the cluster. This most likely places vessels 0010PQR-0013PQR's deposition dates prior to 1935. There is the possibility that the historic and archaeological vessels abandoned near Glover's Cut

are two different temporal abandonment clusters and that they do not correlate, however, that is unlikely.

The additional three wrecks, 1039PQR, 1041PQR, and 1042PQR, did not appear on the June 2009 side scan or during visual inspections of the area. This may be because they were obscured from the side scan by the larger vessels between them and the main boating channel, but a more likely explanation is that they have disintegrated into the muddy river substrate. Because the four larger vessels were not removed from the river it is safe to assume that the smaller vessels are still there as well, even if they are no longer visible in the archaeological record.

A pre-1935 deposition would predate the Yacht Club's Marina construction, and perhaps account for the secondary placement assurance method used on vessel 0010PQR. Discarding vessels in shallow water is an act of placements assurance, defined by Richards and Staniforth (2006:96) as "strategies used to ensure that the discarded vessel remains discarded." Under that definition, placement assurance describes all seven vessels on the 1935 map because they were discarded in shallow water out of the boating channels and thus not creating navigational hazards. The three pilings driven along the end of 0010PQR introduces an addition placement assurance strategy. The pilings are in much better condition than the vessel suggesting they were introduced into the river environment after the vessel was abandoned. It would be reasonable to deduce that the pilings were inserted to keep vessel 0010PQR from interrupting the construction or operation of the Pasquotank River Yacht Club Marina. It is also evident that the four archaeologically investigated barges and the three barges no longer in the river continued the established pattern of vessel concentration on Machelhe Island.

Group Six

Group Six contains four previously recorded ships, 0014PQR-0017PQR, and three newly located vessels, 0064PQR-0066PQR (Figure 4.46). Vessels 0064PQR-0066PQR were identified as potential submerged vessels via side scan sonar in June 2009 but due to water depths in excess of six feet, individual site inspections were not conducted during the fieldwork for this thesis. These three sonar images display distinctive shape characteristics similar to other sonar images that have been verified as vessels. Further investigation on SCUBA is recommended to determine vessel type, identification, and whether they are abandonments or wrecks.

Vessel 0014PQR is distinctive because out of the entire graveyard it is abandoned the farthest out into the active boating channel. Wilde-Ramsing (1985:5) and Lawrence described the vessel as a partially exposed wooden vessel with edge fastened construction on the south side of the channel into City Marina. Revisited in March 2009, vessel 0014PQR was investigated in more detail and an individual site plan was created from the data obtained (Figure 4.47). Vessel 0014PQR is 116 ft. (35.36 m) long and 31 ft. (9.45 m) wide, a 3.7:1 length to beam ratio. The depth of the vessel was measured at 6.6 ft. (2.1 m), however, there is an undetermined amount of deterioration to the upper hull timbers and no decking remains suggesting the original depth could have been deeper. Vessel 0014PQR has two longitudinal bulkheads that divide the internal hold into three areas. These bulkheads provide longitudinal support for the long barge and separate the cargo into three chambers.

It is likely that this rectangular raked-ended barge plied inland waters such as rivers and canals carrying lumber or other naval stores, Elizabeth City's greatest export. Environmental transforms on the barge are similar to other abandonments in the graveyard but for 0014PQR, wind and wave action are especially destructive. The vessel is eroded on all sides because it is

ELIZABETH CITY SHIPS' GRAVEYARD GROUP SIX

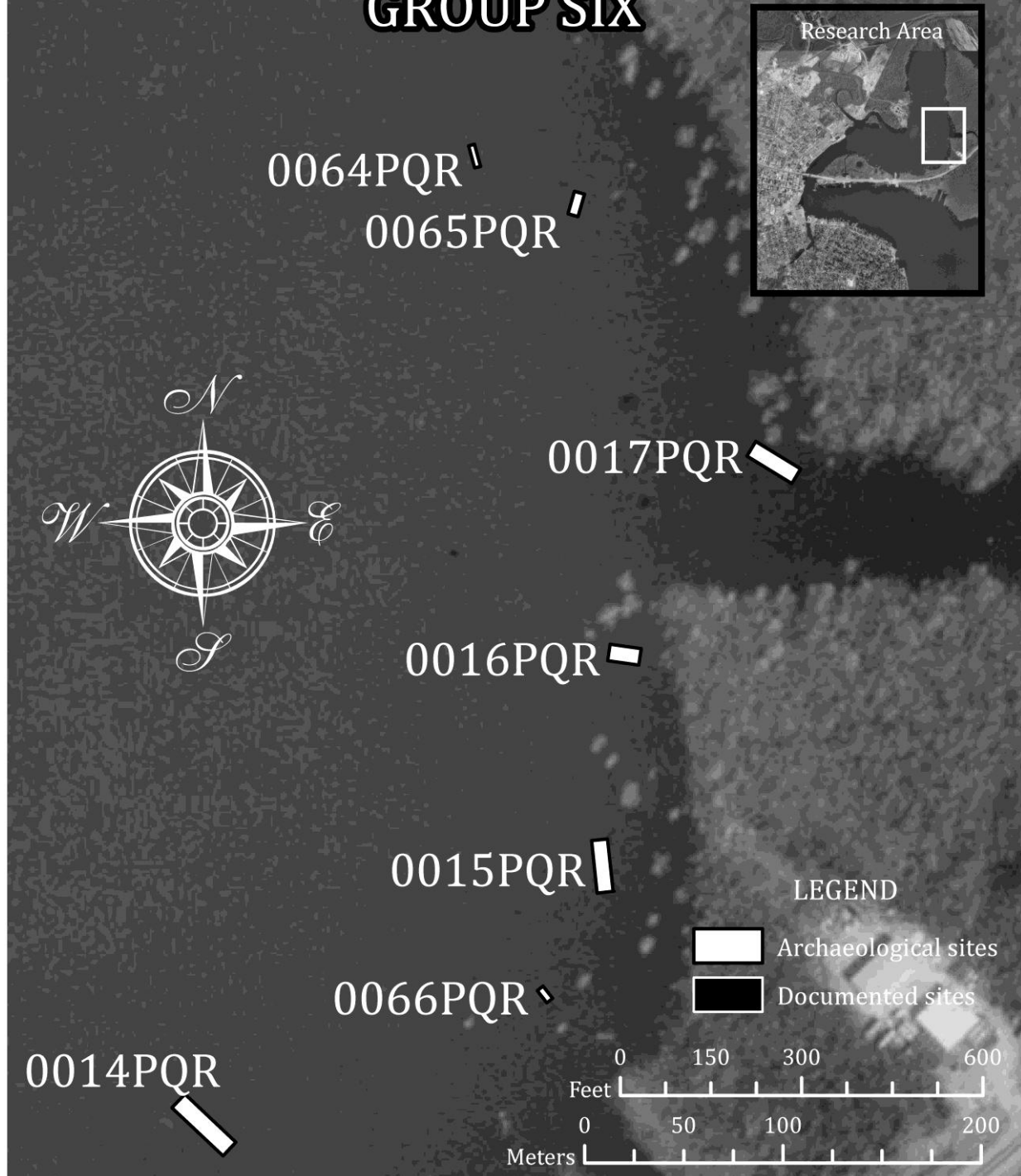


FIGURE 4.46. 2010 site plan of the seven vessels in Group Six (Map by author 2010).

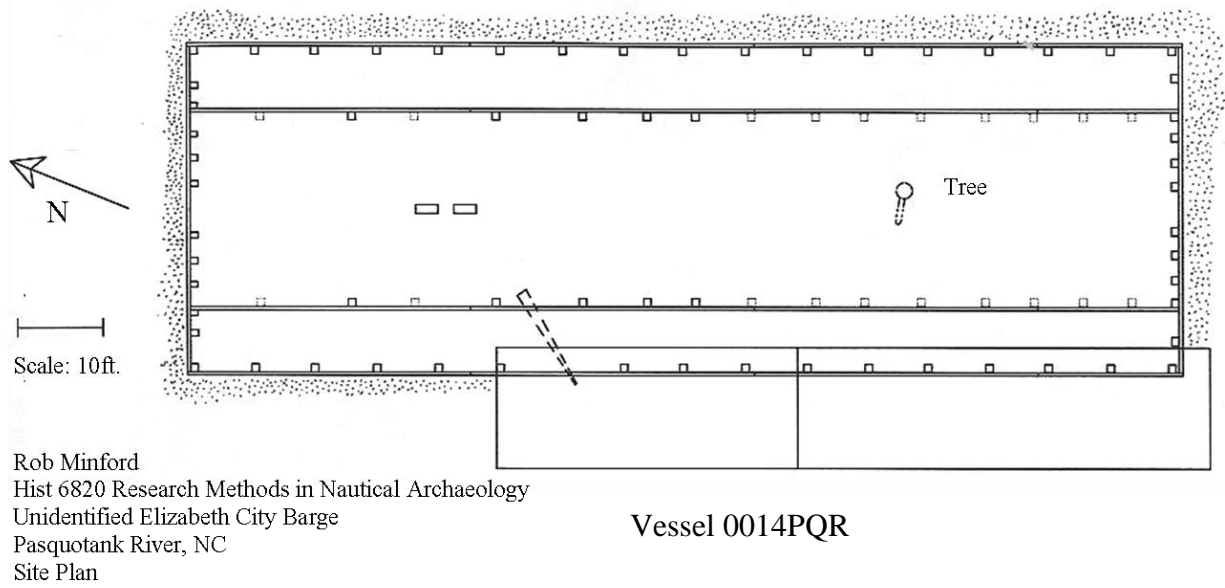


FIGURE 4.47. Vessel 0014PQR site plan drawn from the March 2009 fieldwork data (Minford 2009).

wind and wave action are especially destructive. The vessel is eroded on all sides because it is farther out into the river than any other vessel and has no protection from the shore. There is no indication that vessel 0014PQR had any self-propulsion so there was no machinery to salvage either pre or post deposition. The most likely c-transform to effect vessel 0014PQR today is the occasional boat strike on the submerged end of the vessel.

Lawrence and Wilde-Ramsing identified 0015PQR and 0016PQR as two square-ended barges that lie partially exposed between City Marina and a small creek, one with edge-fastening and the other with frame and plank construction (Wilde-Ramsing 1985:5). Photographs taken during the 1985 survey did not clarify that description any further. Investigators re-examined both sites during the March 2009 fieldwork and were in charge of determining which vessel corresponded to which description based on the differing construction characteristics.

Researchers determined that 0015PQR was the edge-fastened rectangular barge with raked ends (Figure 4.48). Vessel 0015PQR is 87.14 ft. (26.56 m) long and 26.41 ft. (8.05 m) wide creating a 3.3:1 length to beam ratio. This length to beam ratio is identical to vessels

0010PQR, 011PQR, and 0013PQR despite their internal differences. While vessels 0010PQR, 0011PQR, and 0013PQR have athwartships interior bulkheads, vessel 0015PQR appears to have no interior bulkheads, either longitudinal or athwartships. This suggests that the barge could have been an un-decked cargo transport that hauled bulk items.

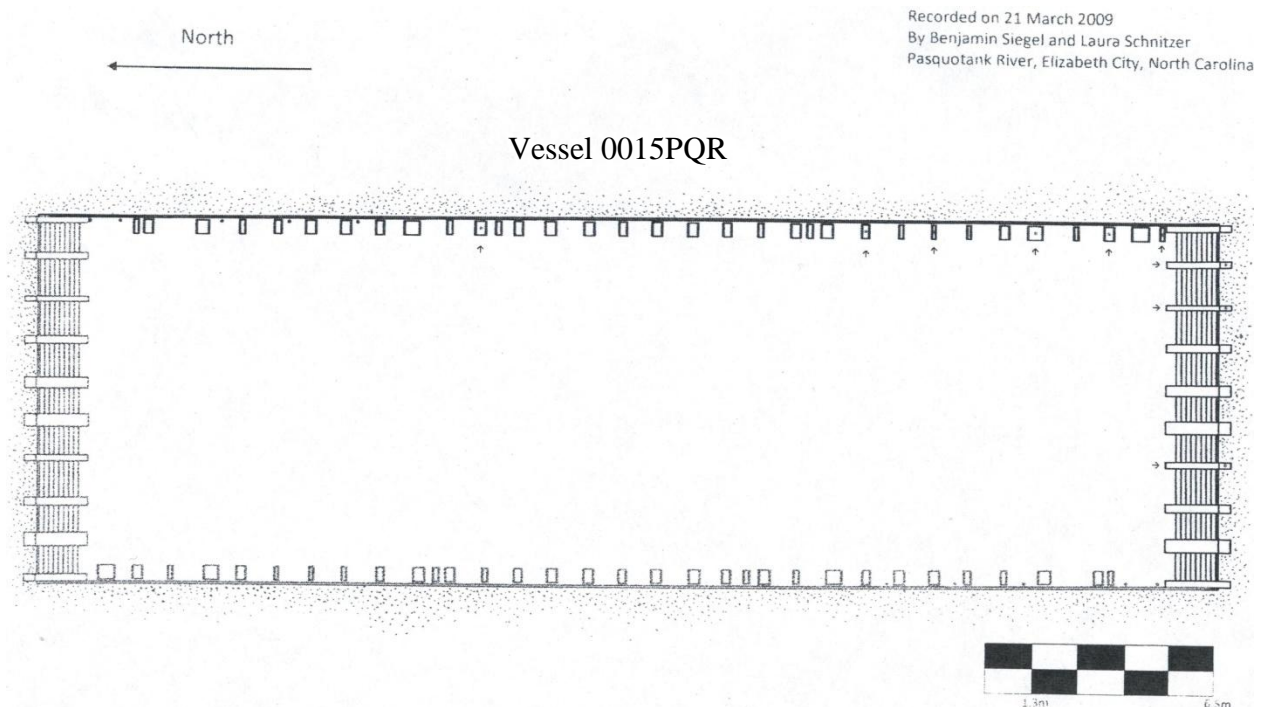


FIGURE 4.48. 2009 Site plan of vessel 0015PQR created from the March 2009 fieldwork data (Siegel 2009, annotations by author).

Vessel 0015PQR is almost entirely submerged with only the tops of the frames exposed above the waterline (Figure 4.49). Environmental conditions are similar to other vessels in the graveyard. Vessel 0015PQR is located closer to shore than 0014PQR but has similar consistent deterioration patterns across the entire hull. 0015PQR was a towed barge, like many of the other vessels in the abandonment complex, so there was no machinery to salvage. Its location close to shore, with numerous Cyprus trees in the surrounding water, suggests minimal c-transform interference on the site formation.

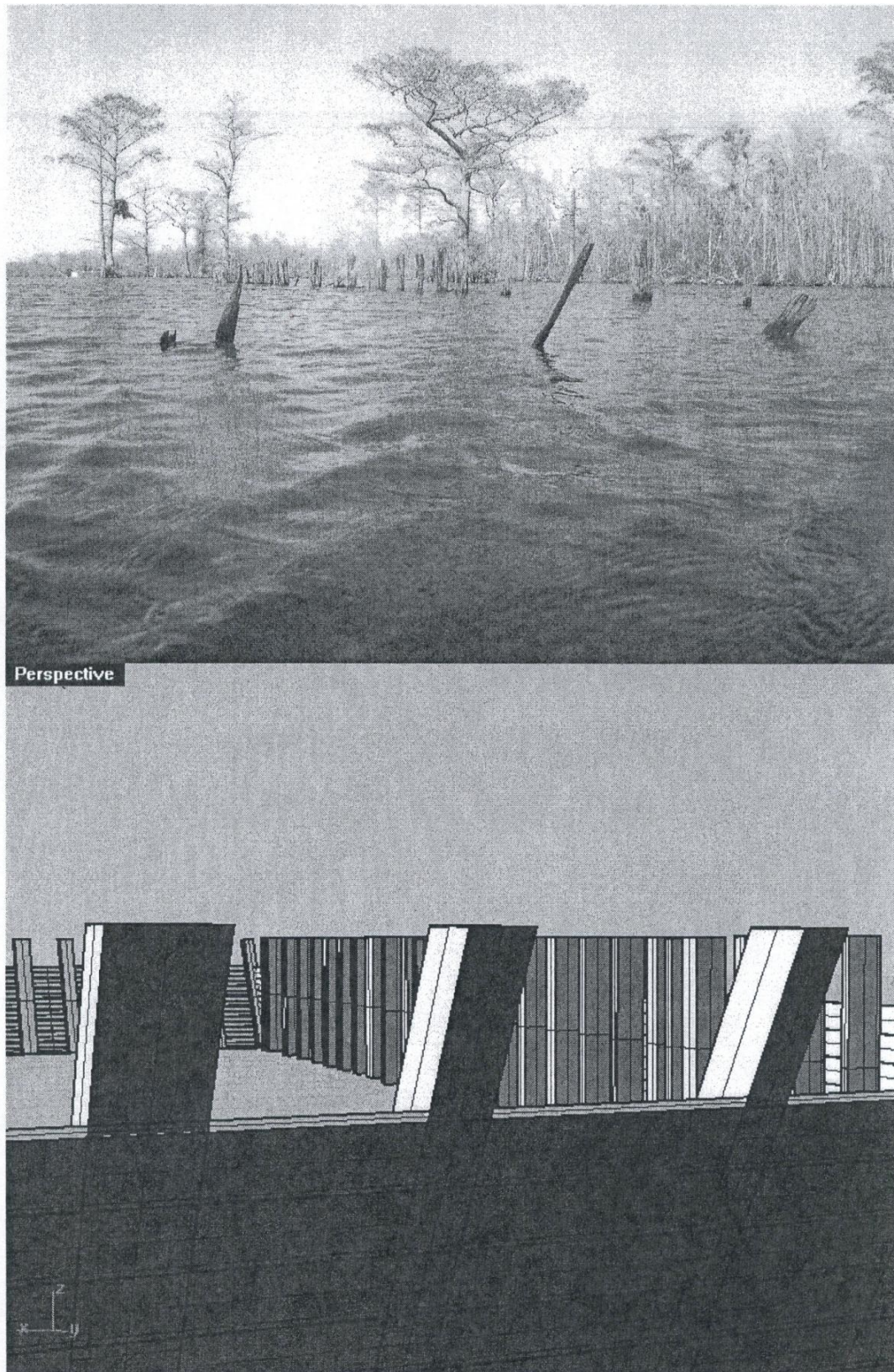


FIGURE 4.49. A photograph of Vessel 0014PQR compared to Vessel 0014PQR's site plan from the same perspective (Siegel 2009:13).

Vessel 0016PQR appears to have deteriorated significantly from the description given by Wilde-Ramsing (1985:5) in 1985. Researchers working on the vessel in March 2009 measured its length at 52 ft. (15.85 m) and its width to 27.6 ft. (8.4 m) giving the vessel a small length to beam ratio of 1.9:1. This ratio is one third shorter than all the barges in the graveyard that have almost identical widths. This suggests that the entire length was not recorded or the vessel has broken up and is dispersed along the bottom. The vessel is located on a slant submerged in the river where the water level changes from three feet over the vessel at one end, to over six feet at the other end, therefore it is possible that the entire length was not recorded using simple breath hold diving techniques.

A number of other construction characteristics were recorded during the March 2009 fieldwork and are visible in 0016PQR's site plan (Figure 4.50). Researchers observed two longitudinal bulkheads running the length of the vessel separating the hold into three sections. In the center of these three sections, a stringer runs the length of the vessel providing additional longitudinal support. Bottom planking runs athwartships, a characteristic found in traditional South Carolina barge and flat construction. The ends of vessel 0016PQR, if there were any, have deteriorated entirely and the longitudinal bulkheads, stringers, and the vessel's sides have minimal relief off the bottom of the hull as seen with the fasteners that continue above the remaining bulkheads and sides.

Vessel 0016PQR lacks side frames and therefore cannot be the "frame and plank construction" barge Wilde-Ramsing (1985:5) referred to but is more likely the edge-joined square-ended barge where the ends have deteriorated. It is possible that this vessel is a flat or lumber raft and therefore not 0016PQR at all, however, it is the belief of this author that the ends of the vessel have deteriorated from its original rectangular box-like shape.

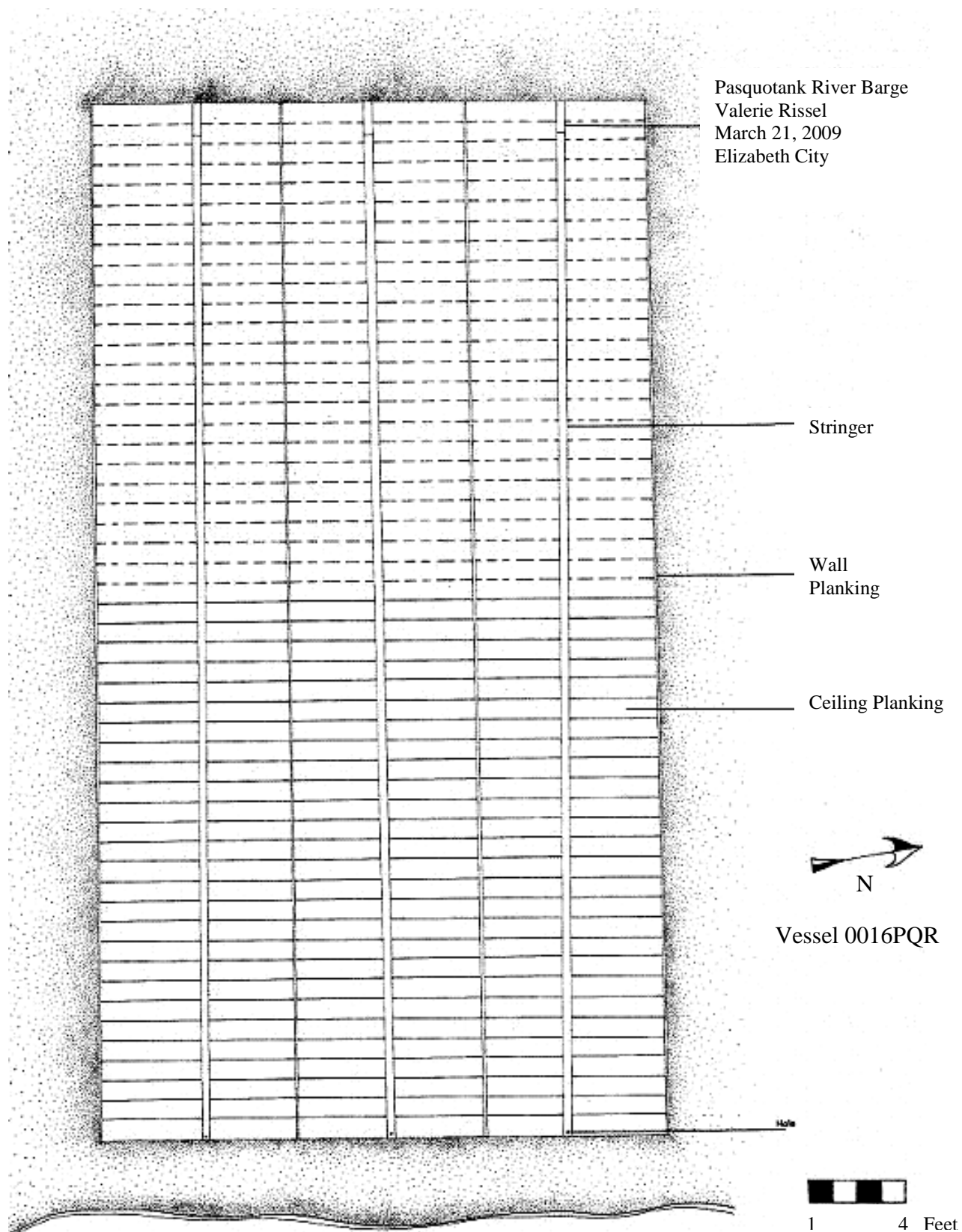


FIGURE 4.50. Vessel 0016PQR site plan (Rissel 2009, annotations by author).

Like the large bay barges 0002PQR-0005PQR, 0007PQR and 0008PQR, vessels 0015PQR and 0016PQR have been abandoned farther still from Elizabeth City's downtown. The proximity to the Dare Lumber Company's old site supports the idea that vessels are often abandoned near their primary use area, in this case near the industries they used to serve. Neither 0015PQR nor 0016PQR had any machinery to salvage or scavenge, and likewise, they had no artifacts worth conserving.

The final previously recorded vessel, 0017PQR, was described by Lawrence and Wilde-Ramsing as a wooden, square-ended barge with compartmentalized sections that reminded them of a hopper barge found in Wilmington, North Carolina (Wilde-Ramsing 1985:5). This is important for establishing hopper barge presence in the Pasquotank River and substantiating the possibility that 0013PQR is also a hopper barge. Vessel 0017PQR was not reinvestigated with the other vessels in March 2009 because a visual search of the area failed to locate 0017PQR. Additionally, the purported hopper barge 0017PQR did not show up as a side scan target during the June 2009 remote sensing despite operating the side scan sonar in the correct area. Vessel 0017PQR appears to have deteriorated beyond recognition as a ship, been removed from the river entirely, or moved to a different location in the river through human or natural forces. It is unclear at this time which of those options is the most likely scenario.

During historical research, there were no references to 0014PQR-0017PQR by either name or general description. While it is likely that these four barges worked locally in the Pasquotank River and Dismal Swamp Canal there is no hard evidence for that conclusion. Seeb (2007:178) observed that vessels in the Eagles Island Ships' Graveyard were often abandoned within their use areas. If Seeb's assessments are accurate, we may assume that these vessels worked locally and the most likely source for vessel identification would be private company

records for businesses that would need to ship products on the river or via the Dismal Swamp Canal during the first half of the 20th century. At this time, local businesses from the early-20th century have not made their private company records accessible to the public, however, this is an avenue for someone to pursue in the future should those records become available. Based on the 1899 Dismal Swap Canal improvements and the rise of rail transportation over waterborne transportation, vessels 0014PQR, 0015PQR, and 0016PQR's deposition range is limited to 1899-1950 (UAB 2004:5; Jeb Stuart 2009, elec. comm.).

Group Seven

The west bank of the Pasquotank River has not yet been discussed in any detail because all but one of the abandonments thus far have been located near the east bank of the river. Group Seven is situated just north of the Knobb's Creek outlet on the west bank of the river in Pasquotank County waters (Figure 4.51). Group Seven is distinctive because it is the only cluster of abandonments comprised completely of previously unrecorded vessels. Six abandoned vessels were investigated during fieldwork in August 2009, none of which had been noted in the five previous archaeological river surveys. Four additional vessels located within the boundaries of Group Seven were found in the historic record, one of which may correlate to a vessel currently in the abandonment complex.

Site 0054PQR represents the remains of a sailing vessel with a pointed bow, traditional keel assembly, what appears to be composite framing and at least one mast step (Figure 4.52). The stern is in worse condition than the bow area, but additional archaeological investigation is needed to move beyond speculation and positively attribute the damage to natural means, such as accidental machinery explosion, or cultural origins, such as damage from salvage or scavenge behaviors.

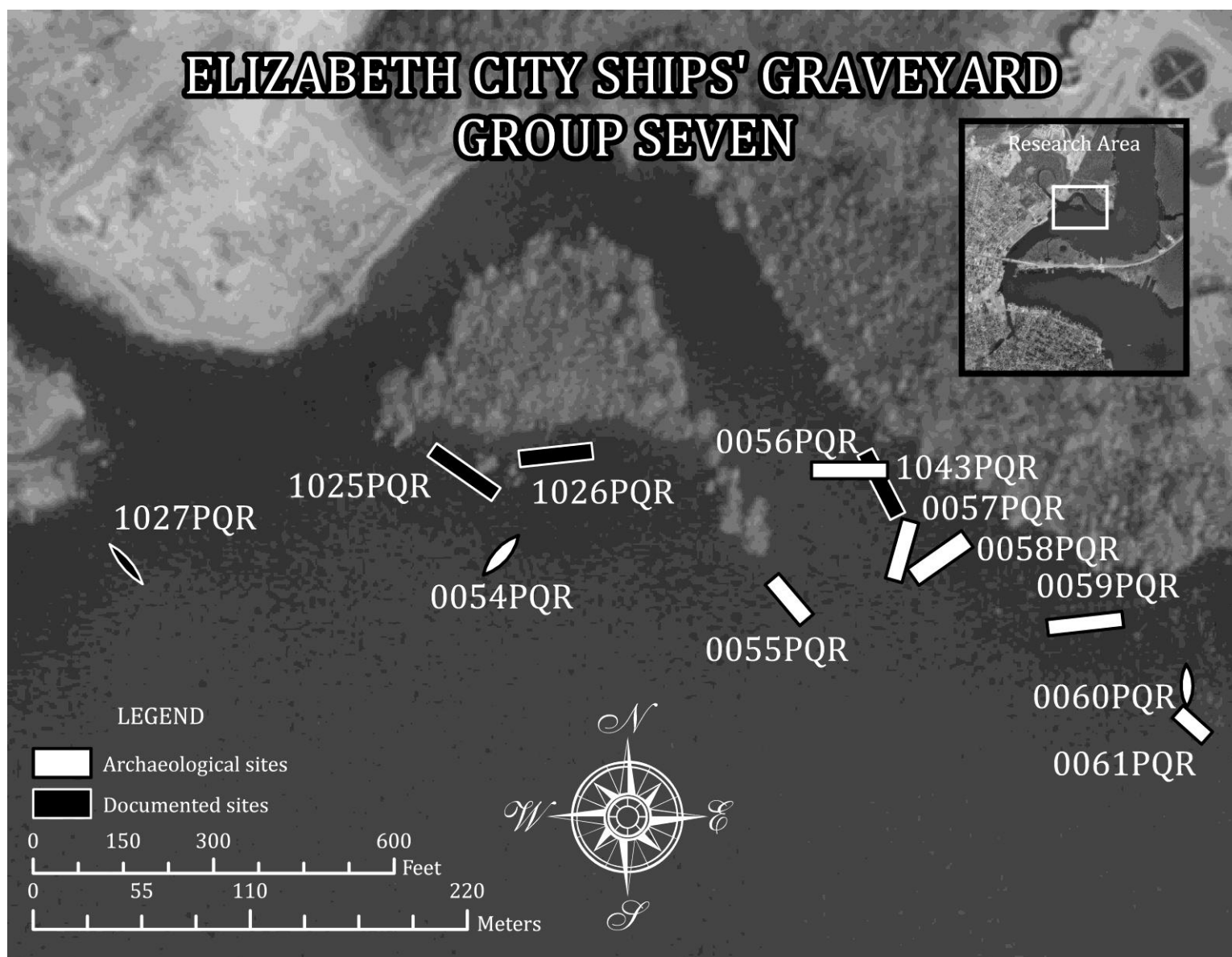


FIGURE 4.51. Group Seven located in Pasquotank County water on the west bank of the river consists of 12 previously unrecorded abandoned vessels (Map by author 2010).

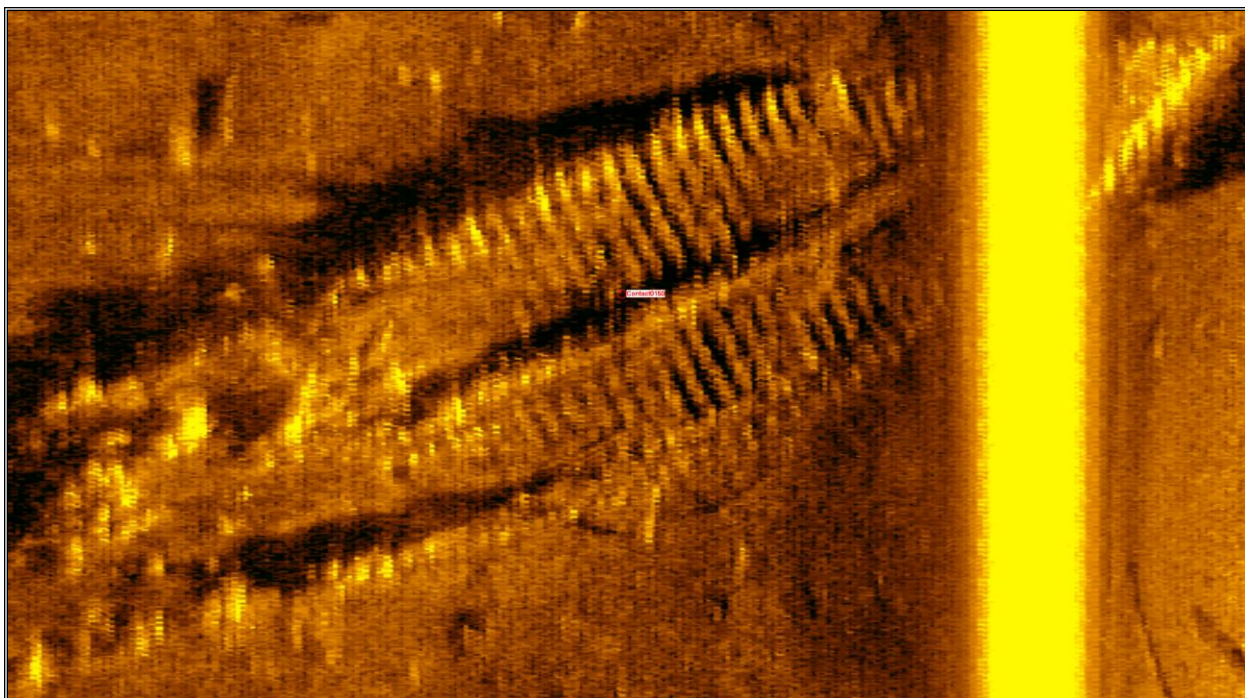


FIGURE 4.52. Side scan image of vessel 0054PQR lying on the bottom of the Pasquotank River (Richards and Smith 2009:54).

Ship 0054PQR represents a departure from the major theme of this ships' graveyard which has been working vessels such as barges and flats. Researchers were unable to investigate this site due to its depth, estimated to be in excess of 25 feet. This ship lies to the north of the entrance to Knobb's Creek, an active shipping waterway in historic Elizabeth City as well as today. When asked about any abandoned ships in this area of the river, Lemuel S. Blades III (2009, pers. comm.) vaguely remembered a decrepit ship with masts but never explored the ship because it was in advanced state of disrepair. The 1935 map revealed barge wrecks in the vicinity of Reed Island but no ships in the water suggesting that vessel 0054PQR was abandoned after 1935. There is no reference to vessel 0054PQR by either name, vessel type, or location in the historical record. Perhaps with further construction details or archaeological data a positive identification or deposition date can be determined in the future.

Sites 0055PQR-0059PQR were initially located during the January 2009 visual survey, verified with the June 2009 side scan survey, and individually inspected in August 2009. Researchers recorded each vessel's gross dimensions and observed abandonment signatures. Vessel 0055PQR lies just beneath the surface of the water perpendicular to Reed Island's southeast point on the west bank of the river. The square-ended barge is 88.58 ft. (27 m) long and 29.53 ft. (9 m) wide giving the vessel a 3:1 length to beam ratio. Researchers discovered the presence of three athwartships bulkheads with the possibility of others that have fallen down or degraded. The upper extremities of the barge still retain a caprail and rubrail 0.33 ft. (10 cm) down from the cap rail. The presence of this construction feature suggests that the barge had an open hold and was not decked over. No angled interior timbers were located making it likely that this was not a hopper barge but an open barge for bulk cargo.

Vessel 0056PQR is a square-ended barge 126.41 ft. (38.53 m) long and 27.49 ft. (8.38 m) wide, a 4.6:1 length to beam ratio. The barge had raked ends, three longitudinal bulkheads, and one athwartships bulkhead dividing the cargo hold into eight compartments. There is a possibility that there were additional traverse bulkheads but the vessel was too deteriorated to detect their presence. The river side of the hull is greatly deteriorated to the turn of the bilge, however, the sheltered side reveals external hull strakes, frames, and interior ceiling planking. The remains of a disarticulated wooden towing bit were located in one end of the vessel but because barges were often built to be double ended this does not denote the bow or stern. The upper portions of vessel 0056PQR have worn away and it is unclear if this barge was originally decked. A single piling was located inside the vessel's hull suggesting intentional placement assurance. The large amount of debris on the interior of the hull may have camouflaged additional pilings.

South of and perpendicular to 0056PQR was another barge, site 0057PQR. Measured at 102.69 ft. (31.3 m) long and 28.54 ft. (8.7 m) wide this barge has a length to beam ratio of 3.6:1, however, investigators noted an abrupt break at one end of the barge denoting the entire length was not measured. From the remaining end, researchers determined that the barge is a rectangular with raked ends and edge-fastened. Vessel 0057PQR's shore side end is abutted to an oversized piling that may have been a channel marker at some point, continuing the graveyard-wide observed trend of placement assurance in this vessel cluster. Vessel 0057PQR is positioned with one end near shore and the other stretching toward the main boating channel and damage by boat strikes could account for break at that end of the barge.

Site 0058PQR is the hull remains of a partially decked barge lying perpendicular to shore approximately 115 ft. (35 m) out into the channel. This vessel provided the only opportunity in the complex to record upper hull construction. At 110.24 ft. (33.60 m) long and 33.69 ft. (10.27 m) wide, this barge has a 3.3:1 length to beam ratio. The hull has a small amount of sacrificial iron sheeting covering its exterior strakes and large wooden rubrail .53 ft. (16 cm) in width and 1.12 ft. (34 cm) high level with the caprail. The deckbeams were notched into outer frames with half-lap joints. These deckbeams sat upon a longitudinal clamp, which in turn, sat upon another set of interior vertical frames. Longitudinal ceiling planking was the final layer of hull structure on the sides. Figure 4.53 illustrates this complex construction from both a cross-sectional view and an overhead plan view.

The interior of the vessel was full of debris, sediment, and upper structure that had fallen in to the hold obscuring the bottom hull construction. The presence of some decking allowed the depth to be measurement at 5.51 ft. (1.68 m). Vessel 0058PQR has three longitudinal bulkheads that were observed through a break in the decking. Because the entire length of the hull was not

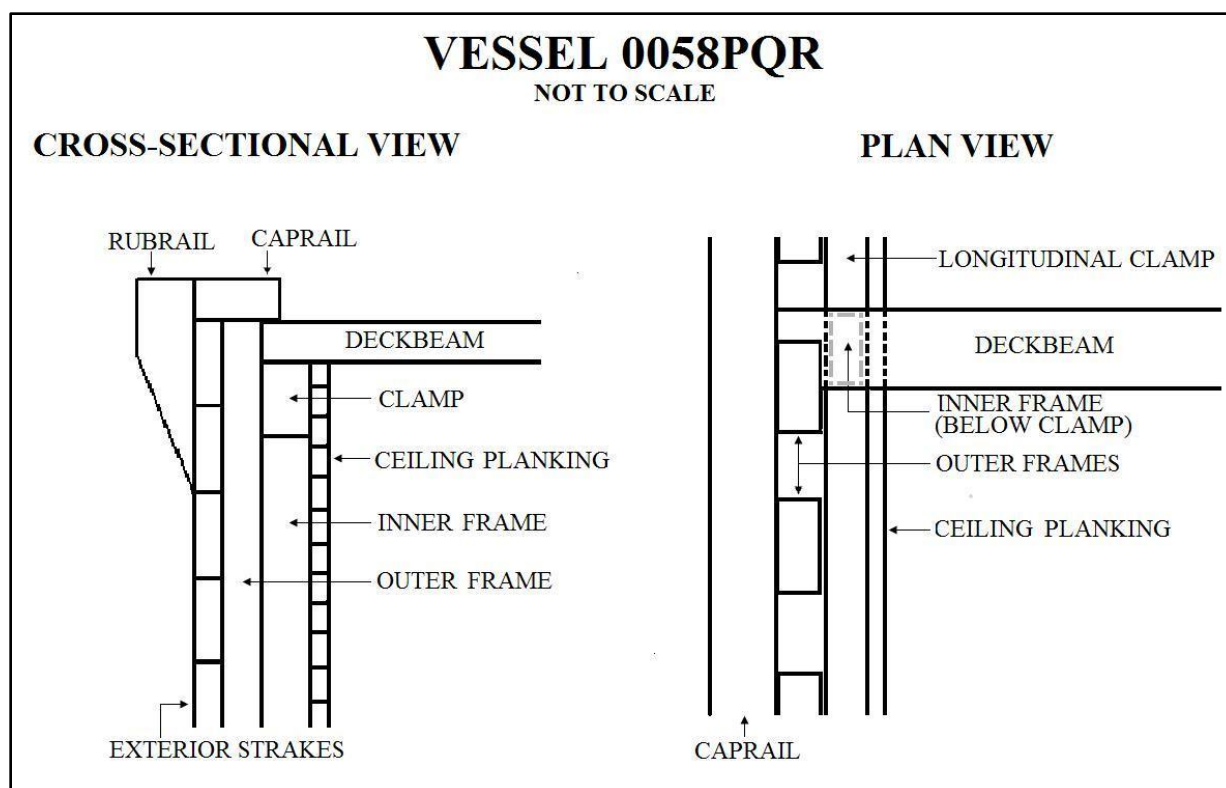


FIGURE 4.53. Detail drawings of 0058PQR's the upper hull construction (Drawings by author 2009).

visible it is unknown if there were any bulkheads running athwartships. Both ends of vessel 0058PQR were badly degraded but the remaining end frames suggested square and raked ends.

Another oddity observed on Vessel 0058PQR was an iron cleat still attached to one end of the barge's deck. The cleat measured 2.46 ft. (75 cm) long, 0.4 ft. (12.2 cm) wide, and 0.66 ft. (20 cm) tall, and is anvil shaped with an oval shaped hole in the center for passing a line through. Metal objects such as iron sheeting, towing bits, and cleats are often legally salvaged either pre- or post-abandonment or removed post deposition via unsanctioned scavenging. The presence of both the iron cleat and plates of iron sheeting is a divergence of normal salvage patterns and possibly suggests that the economic gain associated with salvage did not outweigh the effort of salvaging. Alternately, as Seeb (2008:187) observed in the Eagles Island Ships' Graveyard, this lack of this salvage or scavenging behavior may indicate a lack of economic impetus in the associated economy.

Just southeast of vessel 0058PQR, vessel 0059PQR lies parallel to a long line of pilings, remnants of an historic pier that ran along the shoreline in a roughly east-west direction along the Dare Lumber Company property (Sanborn Charts 1923). The site inspection confirmed that vessel 0059PQR was a very long narrow vessel, 125.66 ft. (38.3 m) long by 26.9 ft. (8.2 m) wide. At 4.67:1, vessel 059PQR has the highest length to beam ratio of the entire graveyard. Only cursory dimensions of this vessel were obtained due to its depth so it is unclear whether the vessel is damaged, thus decreasing its width, or if it was originally constructed with such a high length to beam ratio. Vessel 0059PQR is another site that requires further information for positive identification in both name and vessel type.

Sites 0060PQR and 0061PQR were identified during the 2009 side scan sonar survey. They lie adjacent to Dare Lumber Company's historic wharf (Figure 4.54). Vessel 0060PQR appears to be a sailing ship with a pointed bow, rounded stern, and what could be the remains of a keel assembly. Vessel 0061PQR is a rectangular, decked barge with raked ends that is severely damaged in one end. Their placement abutting an old wharf could mean that they were abandoned there for placement assurance or they sunk while tied to the docks through intentional or catastrophic abandonment. Contained damage to one end of 0061PQR lends support to the catastrophic abandonment hypothesis. Vessels 0060PQR and 0061PQR were too deep to investigate for this thesis and further research would assist any identification attempts.

Vessels 0055PQR-0061PQR demonstrate depositional behaviors seen elsewhere in the abandonment complex. One abandonment located west of the Knobb's Creek, 1027PQR, two barges located south of Reed Island, 1025PQR and 1026PQR, and a single wreck to the east of the island, 1043PQR, represent an earlier phase of the graveyard (Figure 4.51). These historic vessels were located on the 1936 Army Corps map and, with the possible exception of vessel

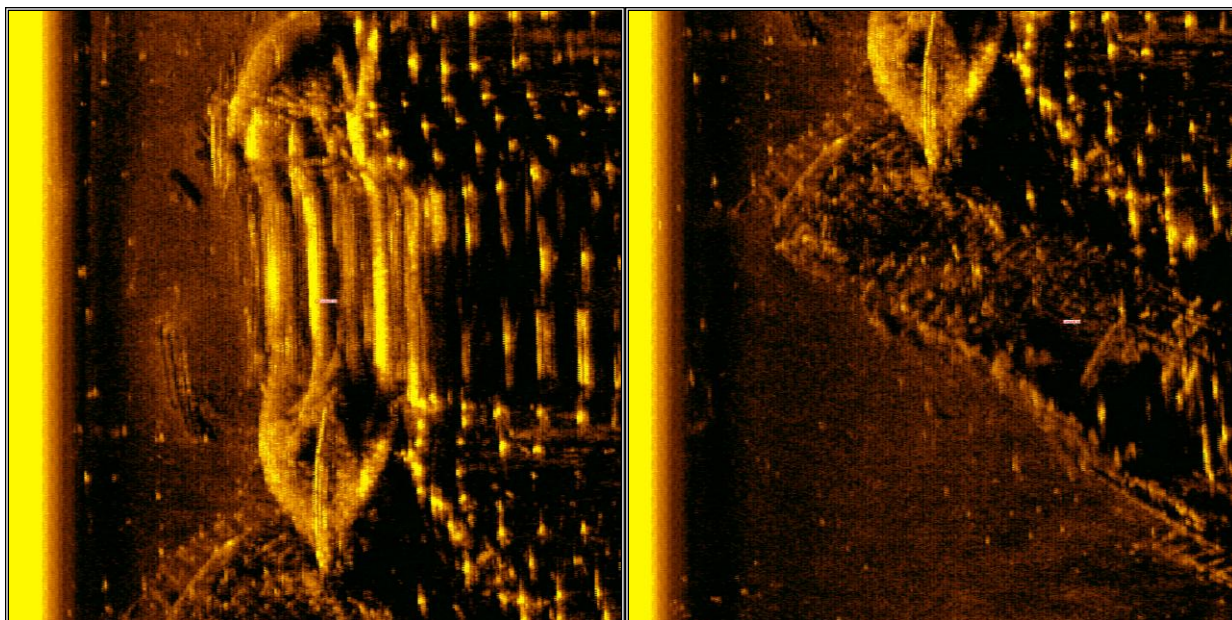


FIGURE 4.54. Vessel 0060PQR, left, is likely a sailing vessel and 0061PQR, right, appears to be a square-ended barge (Richards and Smith 2009:48-49).

1043PQR's corresponding with archaeological vessel 0056PQR, appear to have been removed from the river or deteriorated beyond recognition. These four vessels established this area as an abandonment complex prior to 1935 and subsequent abandoned vessels have increased the vessel concentration based on that earlier established behavior.

Additionally, these vessels were discarded at the vacant docks of lumber companies supporting the hypothesis that vessels are abandoned near their primary use area. Finally, five of the vessels in this area demonstrate secondary position assurance in addition to being abandoned in shallow water away from the main shipping channel. Pilings driven through the hull and abandonment abutted to pilings, docks, and wharf structures are two of the main types of placement assurance. Burning was absent from these vessels, however, the hulls are damaged more than a majority of the other ships in the complex suggesting alternate forms of hull reduction were utilized prior to abandonment. Historical research has uncovered no mention of vessels 0054PQR-0061PQR by name, typology, or location save for the 1935 map. These barges

likely hauled different local cargo through the DSC between 1899 and 1950 when the railroad had become the preferred commercial transportation choice.

Group Eight

Group Eight contains four significant maritime related sites. Site 0062PQR, was located during the March 2009 fieldwork within the log pen, directly in front of the Elizabeth City Sewage and Water Treatment plant and the June 2009 remote sensing identified three abandoned vessels, targets 0116, 0119, and 0121 (Figure 4.55). The three side scan target sites are clustered just north of the Elizabeth City Sewage and Water Treatment plant on the west bank of the river. Lawrence and Wilde-Ramsing previously investigated this area in 1985 at which time they located two abandoned vessels, 0018PQR and 019PQR. The minimal description of 0018PQR and 019PQR provided by Wilde-Ramsing (1885:5) makes correlations with the three side scan sonar targets difficult, however, photographs taken in 1985 provide additional information from which to make correlations.

Researchers discovered site 0062PQR in the Dare Lumber Company log pen during the March 2009 fieldwork. Students then recorded site 0062PQR and created a site plan from the March 2009 data (Figure 4.56). Site 0062PQR is a raked-ended rectangular structure situated perpendicular to the shore in an east-west orientation. The structure appears to have been built in two sections then joined longitudinally with a small gap down the centerline of the structure. At 68.83 ft. (20.98 m) long and 23.83 ft. (7.26 m) wide, site 0062PQR has a 2.89:1 length to beam ratio. The structure has fourteen traverse bulkheads and eight longitudinal stringers. The materials used on 0062PQR are average milled lumber sizes, such as 4 x 4, 6 x 6, and 12 x 12 pieces of lumber, and fasteners appear machine cut and standardized suggesting a 20th century origin.

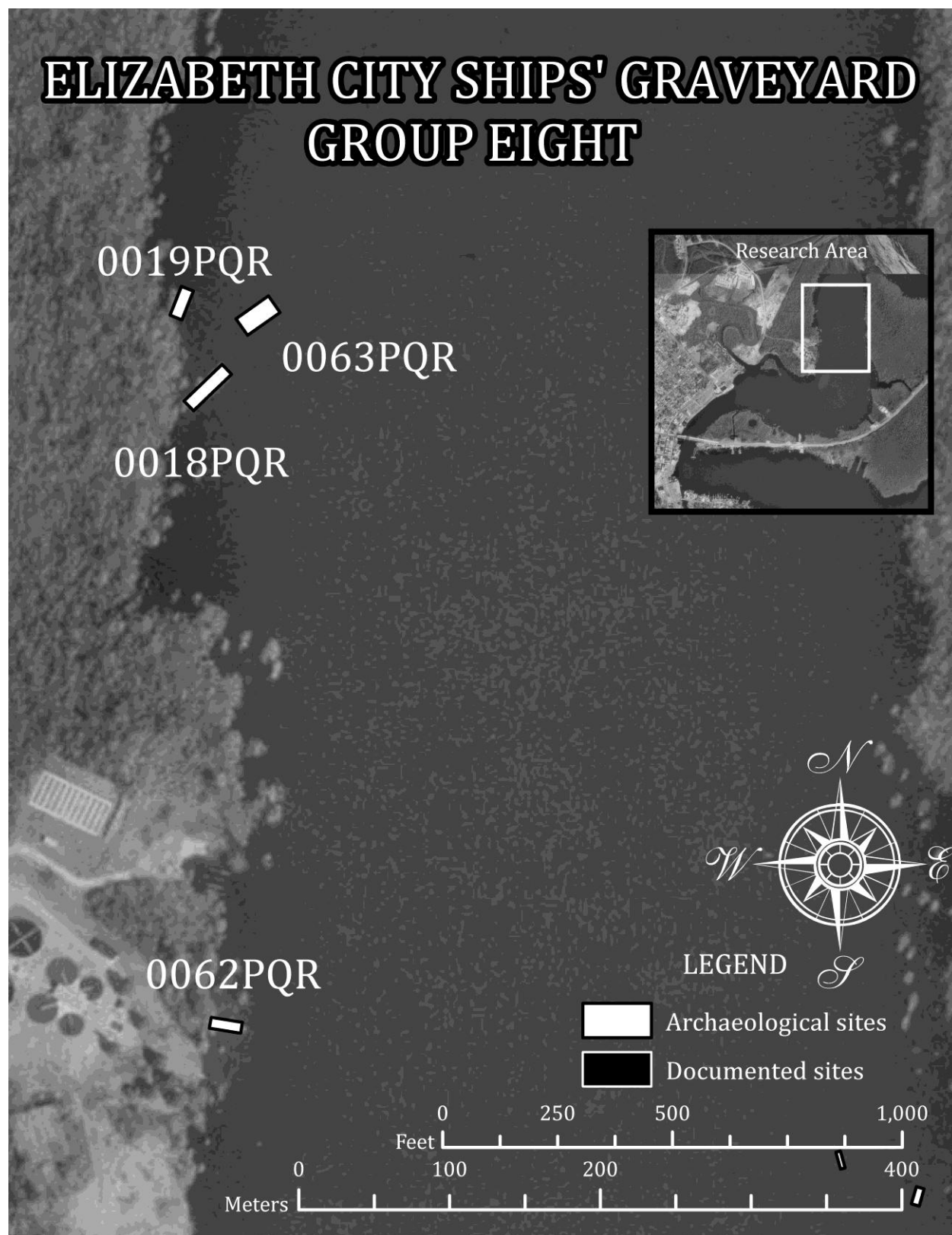


FIGURE 4.55. 2010 Site Plan of Group Eight (Map by author 2010).

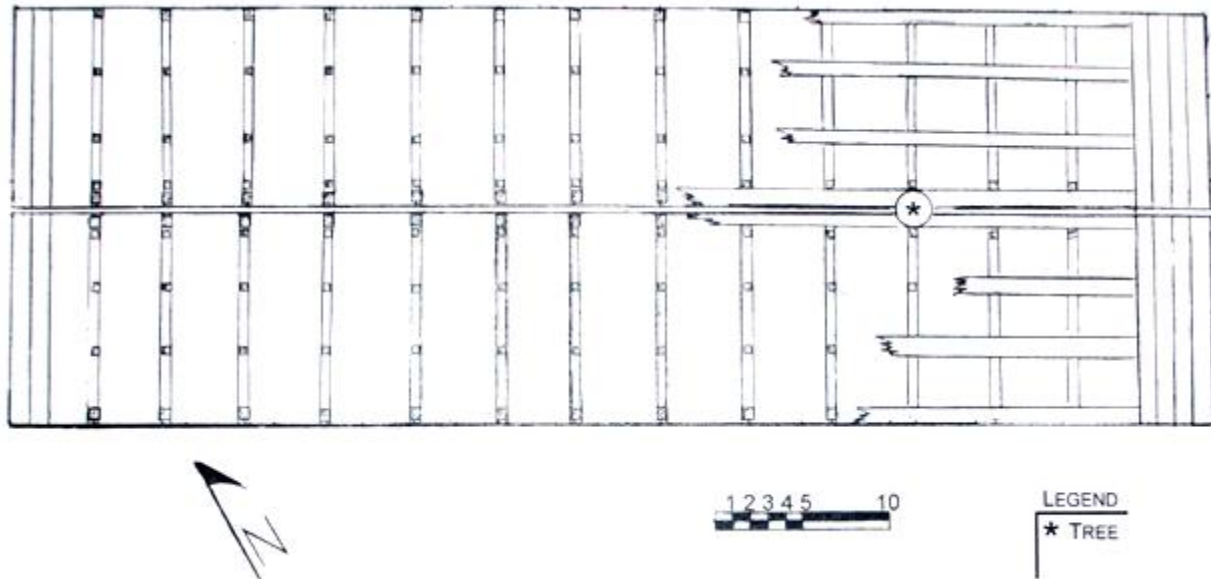


FIGURE 4.56. Site 0062PQR site plan (Lengieza 2009).

Built relatively lightly, site 0062PQR would have functioned poorly as a barge, unable to handle the structural stresses of towing and barge operation, however, because the structure is upside down in the water and any deck fittings such as towing bits or cleats would be buried in the deep sediment. The bulkheads would severely limit the cargo room in the hold of the structure, but if the bulkheads supported a deck, the cargo could be stacked on deck rather than in the hold. An alternate function of structure 0062PQR is that of a plantation flat, described as “rectangular boxes” valued for their “simplicity and economy of construction coupled with the ability to carry a prodigious amount of cargo on a shallow draft” (Fleetwood 1995:91). Structure 0062PQR displays similarities to some of the barges abandoned in the river but has enough differences to prevent a positive identification of function or typology.

When located in 1985, Wilde-Ramsing (1985:5) described vessel 0018PQR as a nearly intact wooden square-end barge with three longitudinal bulkheads and a stern deckhouse on an asphalt-paved deck. Vessel 0019PQR was also described as wooden and square-ended but only partially exposed. Of the three targets located via remote sensing, archaeologists were able to

record two of them, 0116 and 0121, and the third, 0119, was inaccessible due to excessive water depth. Target 0116 is an almost entirely submerged wooden barge 67.42 x 27.76 ft. (20.55 x 8.46 m) with raked square ends and a hold full of debris and rocks. Target 0121 is also a wooden barge with raked square ends, measures 114.83 x 29.72 ft. (35.0 x 9.06 m), has longitudinal bulkheads, and is only partially submerged. Comparing the 1985 physical descriptions with data collected in August 2009 suggests that target 0121 is the vessel Wilde-Ramsing (1985:5) identified as 0018PQR.

The location for 0018PQR was described as “inside the timber pen on the Elizabeth City side of the river” (Wilde-Ramsing 1985:5). Vessel 0019PQR, on the other hand, was reported by Wilde-Ramsing (1985:5) to be located just outside the north end of the timber pen. This information reinforces the assertion that target 0121 is synonymous with 0018PQR because 0121 is located just inside the log pen while target 0116 lies approximately 200 ft. (60.9 m) north of the log pen.

The photographs taken during the 1985 survey, however, discredit this correlation. Figure 4.57 represents Lawrence and Wilde-Ramsing’s photograph of vessel 0018PQR, and Figure 4.58 is the 1985 image of vessel 0019PQR. The vessel labeled 0019PQR (Figure 4.58) exhibits the longitudinal bulkheads attributed to 0018PQR in Wilde-Ramsing’s 1985 report. Recording this vessel in 2009, the author confirms that target 0121/vessel 0018PQR has longitudinal bulkheads and lies within the northern boundaries of the lumber pen. Investigation of target 0116 confirmed vessel 0019PQR’s location just north of the log pen, and as the image suggests, parallel to the west bank of the river. Analysis of the discrepancies created by the 1985 photographs suggests, to this author, that the photographs were accidentally mislabeled by switching the vessel numbers. Figure 4.58 is actually 0018PQR and Figure 4.57 is actually 0019PQR.



FIGURE 4.57. Vessel 0018PQR as seen in 1985 by Lawrence and Wilde-Ramsing (Photograph courtesy of the NCUAB 1985).



FIGURE 4.58. Vessel 0019PQR as seen in 1985 by Lawrence and Wilde-Ramsing (Photograph courtesy of NCUAB 1985).

Earlier photographs have provided a short chronicle of the two vessel's deterioration. Vessel 0018PQR appears in almost identical condition today as it did when Lawrence and Wilde-Ramsing took the image, while 0019PQR has deteriorated to the level of the river with no indications of previously having a deck or pilothouse. While it is possible that 0019PQR's upper structure was destroyed by salvaging, scavenging, or other cultural behaviors, it is more likely that n-transformations were responsible for the destruction. The apparent lack of change in 0018PQR's condition suggests that site formation processes below the water are slower than those acting on the hull above water. It could also be said that once a vessel deteriorates to the water level it's over all site formation processes are considerably retarded.

Vessels 0018PQR and 0019PQR exhibit a number of depositional characteristics previously mentioned. Vessel 0018PQR was abandoned within the confines of the log pen which acted as a placement assurance secondary to the shallow area the ship was deposited in. Vessel 0019PQR's hull appears to be full of rocks and debris which, if intentionally filled, acts as another type of placement assurance. Both vessels were most likely operated in the area hauling local commercial products to northern markets via the DSC, especially as these are the two vessels located closest to the southern end of the canal. If this was their primary use area, it would support the growing trend of vessels discarded in areas where they were used.

The third remote sensing target, 0119, is located midway along the interior of the north wall of the lumber pen. The sonar image of 0119 suggests characteristics seen repeatedly in the graveyard, rectangular shape, raked-ends, and straight sides, however, further archaeological investigation is needed to definitively identify the target as a specific vessel type. The two vessels, 018PQR and 0019PQR, like many of the other barges abandoned in the river have not been located in the historic record. No references by either name, location, or vessel type have been located in historic sources at this time.

Conclusion

Compiling the archaeological and historic sources for the Elizabeth City Ships' Graveyard identified 101 vessels and 3 maritime significant sites. Spatial analysis of the historic and archaeological vessels discovered correlations between a number of these vessels. Individualized profiles based on the various historic and archaeological datasets were then created for the 84 ships in the abandonment complex. Abandonment and site formation processes strip vessels of their individuality and attempt to silently erase them from history. Compiling the 84 vessel life-cycles presented in this chapter has identified various aspects of these hulks'

previous identity and function. These vessel profiles illustrate post-depositional deterioration for certain vessels while other profiles provide information about vessels' function in Elizabeth City's historic economy. Some sites stand out because of their distinctive construction while others are singled out because they have been removed from the archaeological record and represent the longevity and continuity of the graveyard.

Evaluating the site formation processes, use, modification, and deposition behaviors on an individual basis have revealed variations between single vessels or vessel clusters and identified the patterns that the complex has in common. For the majority of the ships in the graveyard the primary function was as generic work vessels that serviced local industries and hauled cargo to northern and coastal markets. Noticeably absent from the graveyard was any discernable pattern in modifications that resulted in secondary functions. With the exception of *Clarence A. Holland* (1009PQR), which was repurposed from a commercial lumber carrier to a Sea Scouts training ship late in its career, and possibly Thompson's Wreck/Old Metal Barge (0001PQR/1050PQR), modified from a self-propelled vessel to a barge, there were no observed modifications within the graveyard. Other repeated depositional patterns throughout the graveyard include spatial clustering and relationships between the vessel and abandonment location. There are few instances where a ship was abandoned on its own, and with the possible exception of Thompson's Wreck/Old Metal Barge (0001PQR/1050PQR) and the oyster barges (1003PQR-1006PQR), all the vessels appear to have been abandoned near their primary use area.

Evidence of additive and reductive processes were also evaluated in this chapter. Evidence of salvage, scavenging, and conservatory processes were observed on a number of the ships in the abandonment complex. Hull minimization treatments such as burning and removing superstructure were also evident, though removing superstructure via c-transformations rather

than n-transformations is more difficult to determine. Evaluating these additive and reductive processes generated information about the behaviors that created the processes and led to the abandonment decisions.

The following chapters will present Elizabeth City's history in three acts according to Fernand Braudel's three-tiered model of temporal rhythms, the *longue durée*, *conjonctures*, and *historic événements*. Chapter Five presents Act One: The *Longue Durée*, and focuses on evaluating the role geography plays in the development and use of a specific area and looks at how inhabitants interact with that environment over time. This section will stress maritime interaction during pre-historic Native American settlement, European colonization, Elizabeth City's formative years, and briefly look at the city's development through the 21st century.

Within the framework of the *longue durée* there are *conjonctures*, or smaller time periods, that range anywhere from five and ten years to fifty or one hundred years of concentrated activity that shape a culture. Chapter Six: Act Two: The Main *Conjoncture*, hones in on Elizabeth City's heyday, a period from 1881-1950 when maritime interaction soared and shaped the city's development. It is during this century that Elizabeth City reaches its peak involvement in waterborne commerce throughout the mid-Atlantic.

The main *conjoncture* establishes the framework that allows the *historic événements* to take place. Chapter Seven: Act Three: The *Historic Événements* relates the smallest level of history, individual abandonment events and the ships' graveyard, to Elizabeth City's changing culture. Viewing the ships' graveyard as a microcosm of technological advancement, economic change, and shifting cultural perception of the once life sustaining maritime environment allows micro-historic events like ship abandonments to the bigger picture. Discussing Elizabeth City's history on these three time scales will provide the most complete picture to date.

CHAPTER FIVE: ACT ONE: THE *LONGUE DURÉE*

Introduction

Braudel's largest level of history, the *longue durée*, examines elements of the macrohistory in terms of long-term social and environmental factors that influence human behavior. He asserted that "macrophenomena were determinate and microphenomena indeterminate" and that only with diverse and comprehensive analysis would historic events attain significance (Knapp 1992:6; see also Lucas 1985). Analyzing the geographic elements that made the area that would become Elizabeth City ripe for settlement and looking at prehistoric human interaction with that environment is the first step to the diverse and comprehensive analysis Braudel supports. This chapter will assess the geological creation and long-term maritime interaction in the targeted area as established by Delgado's (2008:34-51) implementation of the *longue durée* in his analysis of California's Pacific coast and its influence on the development of San Francisco's waterfront.

Milton Ready, professor of history at UNC Asheville and author of *The Tar Heel State: A History of North Carolina* (2005), captures the importance of geography in shaping an area's history when he wrote, "For North Carolina, as for so many other states, nations, and regions, geography has been a part of its destiny" (Ready 2005:1). Moreover, it is really the most logical place to begin when compiling a complete history. Studying North Carolina's geography sets the foundation for understanding human interaction with the natural environment throughout its history. Looking briefly at Native American settlement patterns in the Albemarle region, European colonization on the Pasquotank River, and Elizabeth City's history from its incorporation through the end of the 19th century will demonstrate long-term trends of human interaction and relationship with the maritime environment.

North Carolina Geography

At the end of the Paleozoic era, 225 million years ago, a shallow warm sea blanked the area of the supercontinent Pangaea that would one day become North Carolina. The eastern seaboard of North America finally emerged from the oceanic inundation caused by the breakup of Pangaea 70 million years later during the Cretaceous Period. This was just in time to begin a continuous cycle of ice ages, with the most recent glacial event receding around 11,000 B.C. (Ready 2005:1-5). This period represents a critical juncture in coastal North Carolina history. Following the last glacier's retreat, rich dense forests repopulated the newly exposed Coastal Plains. The dense forests, rich soil, and glacial-formed rivers, coupled with a humid subtropical climate, were the necessary resources that would first sustain Native American settlements and later provide the building blocks for European fur trading stations and colonization in the Albemarle Region.

As mentioned previously, the Albemarle District defines the area of North Carolina from the North Carolina-Virginia border south to the Albemarle Sound and stretches from the east bank of the Chowan River to the Outer Banks. Within this geographical area, four major rivers, the Pasquotank, Perquimans, Chowan, and Roanoke, as well as numerous minor rivers and streams drain into the Albemarle Sound. This area is considered part of the Coastal Plain that incorporates the Albemarle and Pamlico Sound areas and the Outer Banks. The Coastal Plains is the eastern-most geographical type of land in North Carolina. The middle of the state is the Piedmont Plateau and the Blue Ridge is the western geographical type (Ready 2005:10).

North Carolina's east-west orientation, reaching 540 miles over the 3 distinct geographic sections, has historically created social, economic, and political divisions among its inhabitants. Mountaineers have historically felt largely ignored and neglected by the eastern

sections of North Carolina and often identified with Tennessee to the west or South Carolina to the south. The Coastal Plain witnessed almost continuous turmoil, most frequently between the Albemarle and Cape Fear regions, because each area reflected the political views and social strictures of their closest neighbor, Virginia and South Carolina, respectively (Reading 2005:10).

The rivers of North Carolina provided additional geographic divisions. In the mountains, the eastern continental divide splits the French-Broad River and dictates its path north to Tennessee and south to South Carolina, thus cutting mountain residents off from the eastern three-fourths of the state. The Catawaba, Broad, and Yadkin-Pee Dee Rivers in the Piedmont Plateau flow southeast into the Atlantic Ocean via South Carolina permitting extensive communication and trade with North Carolina's southern neighbor while alienating itself from the Coastal Plains. The eastern flowing Tar, Neuse, and Cape Fear Rivers create further divisions. These broad shallow rivers separate the Coastal Plains into three distinct regions and disrupt north-south communication, navigation, and trade (Ready 2005:13). These trends of separation by waterway are seen in native settlement patterns, European colonization, and later, during the state's developmental struggles.

Native American Presence in the Coastal Plains – Pre-Historic

Native tribes populated North Carolina long before the introduction of European explorers and colonists. Conservative estimates place Early Paleo-Indians in the region around 9500 to 9000 B.C. (Ward and Davis 1999:29-31). Native Americans migrating to North Carolina were members of the extensive Clovis Culture that dominated North America. Upon arrival in the area, they found lush, dense forests, rich waterways, and large populations of mega fauna well suited to their small-herd nomadic lifestyle.

The Coastal Plains extended several miles to the east of the current coastline during the Paleo-Indian period. Dr. David S. Phelps (1983:22), North Carolina archaeologist and former anthropology professor at East Carolina University, posited that the encroaching ocean is the reason for the dearth of Coastal Plains Native American sites; they are inundated miles out into the Atlantic Ocean. Phelps (1983:22) also claims that sites found on the modern coast and during river basin surveys represent Native American adaptation to central Coastal Plains environments not actual coastal living. While this distinction is necessary for an in depth analysis of coastal versus inland riverine Native American lifestyles, the mere fact that both types of archaeological sites exist support varying forms of maritime interaction during the Paleo-Indian and Early Archaic Periods.

Shell middens and various stone tools represent the majority of knowledge of maritime interaction throughout the Archaic and Early Woodland Periods as settlements were small, temporary or seasonal, and constructed completely from organic materials. Progression into the Middle and Late Woodland Period, which often runs into Historic Period 1000 A.D., expands the physical imprint to include burial mound excavations. The wide range of grave goods found in burial mounds further archaeologists' knowledge of these cultures' settlement and sustenance patterns and ultimately reflect their interaction with the surrounding geographic environment (Figure 5.1) (National Park Service 2010).



FIGURE 5.1. “Life in the Golden Crescent: Spring, 800 A.D.” A modern interpretation of Late Woodland sites on the southeastern seaboard based on archaeological finds in Georgia and Florida (National Park Service 2010).

Native American Presence in the Coastal Plains – Historic

Native Americans living in North Carolina during the 16th century belonged to three main linguistic families: Algonquian, Siouan, and Iroquois (Paschal 1984:5-6). Tribal territory was segregated by geographical region in addition to linguistic family. Siouan tribes resided mainly in the plains region and had little contact with colonists as they were continually moving to escape raids from the northern Five Nations of New York (Paschal 1984:8-9). At the time of English contact, Cherokee, Meherrin, and Tuscarora were the three main populations of Iroquois descent interacting with the colonists. Cherokee were the most widely settled throughout the state, spanning both sides of the Appalachian Mountains. Meherrin tribes occupied lands in Virginia and northeast coastal North Carolina, and Tuscarora tribes were concentrated “...in about fifteen villages lying chiefly between the Tar and Neuse Rivers...” (Paschal 1984:8; see also Hodge 1911:786). Cherokee, because of their vast territory, and Tuscarora and Meherrin, because of their strategically placed coastal settlements, were positioned to have the most interaction with the first North Carolina settlers.

Algonquian Native Americans had been present in the Albemarle region since 800-900 A.D. (Paschal 1984:5). Archaeologists have defined the period from 800-1650 A.D. the Colington Phase which represents the Carolina Algonquian culture Europeans witnessed upon arrival in North Carolina (Phelps 2001:1). During colonial times, Algonquian tribes specific to the Albemarle Sound were the Yeopim, Pasquotank, Perquimans, Chowanoc, and Poteskeet (Federal Writers Project 1939:25). Due to their coastal settlements, Algonquian tribes were the only native group to interact continually with Europeans beginning with first contact in the 1520s (Paschal 1984:6).

Historically Northeastern Woodland tribes, these Algonquin and Iroquois tribes expanded and migrated from their ancestral territory to southern coastal regions. They were able to retain many of their traditions and customs while adapting new practices to adjust to the new environment. Coastal Algonquian societies were complexly organized, and they utilized the geography and natural resources of northeastern North Carolina with great efficiency. By the contact period, the society was primarily aggregate, however, archaeological investigation of refuse sites at the Baum Site in Currituck County (1980), the Tillett Site in Wanchese (1972-1979), and the Amity Site (31HY43) in Hyde County (1984-1989) have revealed an abundance of marine and fresh water fish remains suggesting a maritime influenced supplementary diet (Phelps 2001:1). It is also clear that shellfish represented a significant contribution to Coastal Algonquian diet as well, namely mussels gathered from freshwater rivers and oysters, clams, and scallops harvested from the coast (Phelps 2001:1). Native Americans enjoyed the Albemarle region's rich lands for their small crops and the rivers and coastline for fishing and easy transportation, qualities Europeans would come to value in the area as well.

European Colonization on the Pasquotank River

European interaction with Native tribes in North Carolina varied from respectful to openly hostile and derogatory. Unrestrained colonial expansion throughout North Carolina created racial tensions and conflict between the two vastly different cultures. Europeans sought to possess the same key natural resources and geographic positions that Native Americans had previously identified as valuable. Repeated infringement or disregard for treaties between European colonials and native North Carolinian tribes resulted in numerous wars, brutal in nature and high in casualties. The Chowanoc Indian War of 1675-1677 involved Albemarle settlers in the first significant war with Native Americans in the North Carolina region. The outcome of other wars, such as The Tuscarora Indian War of 1711-1715, the French and Indian War during the 1750s, and the three Cherokee Indian Wars from 1759-1761, 1776-1777, and 1780-1781, dictated European-Native American relations throughout the state (Hodge 1911:43, 214,245-249,843-850; Paschal 1984:10-11).

Sir Walter Raleigh obtained a charter for his first expedition to the Carolinas in 1584 through his relationship with Queen Elizabeth I (Elizabeth I Charter to Sir Raleigh 1584). Elizabeth granted a royal patent to Raleigh's half brother Sir Humfrey Gilbert, 11 June 1578 (Slafter 1903:95-102). Shortly after landing in Newfoundland in 1583, it was evident that the expedition would be unsuccessful. Ill timing, under provisioning, and poor location all contributed to Gilbert's failure, which ended in tragedy as the ship foundered in a storm on the return journey. Consenting to renew Gilbert's patent in Raleigh's name, Elizabeth expected great success of the next attempt to colonize North America.

Raleigh's expedition arrived off the Outer Banks on 4 July 1584 (Powell 1984:31). During the initial reconnaissance, small expedition parties spent two months exploring North

Carolina's coastal sound areas, traveling up the rivers, and interacting with the Native American tribes of the Albemarle Sound (Ashe 1894:27). This first experience with the Carolina coast and its positive impression would stay with Europeans despite failed first attempts at colonization on Roanoke Island, and would be remembered when establishing permanent colonies in the Albemarle area early in the 17th century.

Virginian settlers began migrating into the Albemarle region shortly after the successful establishment of Jamestown in 1607. The fur trade was an important means of barter and the Virginian colonists advanced into the Albemarle region as early as 1608 to trap game and trade with native trappers. Construction of a fur trading post for North Carolina's first permanent European settler, Nathaniel Batt, in 1654 established a concrete link between the influx of settlers into the Albemarle region and their parent colony, Jamestown (Griffin 1970:3).

Rich soil also drew settlers south of the established colonies. Doctor James Brickell (1968:9), a colonist during the 1700s, recounts:

The second Settlement was made in King *Charles* the Seconds Time ... in *Albemarl* [sic] County, be several Persons from *Virginia*, and other Northern Colonies, who finding the Soil so very good and fertile, settled here, and are become very Numerous and Rich; for the Lands here produce every thing Planted in them in great abundance...

Colonists settled between the many Albemarle County rivers on fertile lands bought from the King of the Yeopims. These colonists followed Nathaniel Batt in becoming the first permanent European residents of North Carolina. Historian Samuel A' Court Ashe (1908:59) captured the settlers' decision to move south, "It was not oppression that drove these first settlers into the wilderness...they were bold, enterprising, hardy Virginians...who were wooed to this summer land by the advantages of its situation." Advantageous geography and natural resources were the only advertising needed to draw settlers to the area.

Eight English noblemen, becoming aware of the increased emigration into the area, petitioned Charles II for land grants in the Albemarle region. As payment for their recent support, Charles II drafted the Charter of Carolina of 24 March 1663 (Charles II 1663 Charter). The charter allocated land tracts for these Lords Proprietors, some of whom can be linked with the area that would eventually become Elizabeth City. This created problems for the colonists already residing on the land Charles II deeded to the Lords Proprietors, some of whom had been in residence for almost a decade prior.

Tensions between the Lords Proprietors and their supporters and the anti-proprietary colonists came to a head in the 1677 Culpepper Rebellion. Arguments over local government and taxation culminated in the John Culpepper's arrest as the instigator of the rebellion. Proprietors, refusing to admit to the inability to govern in the colonies, came to Culpepper's defense during the trial in England. While some historians claim Culpepper's rebellion as the colonists' first salvo in rebellion against mother England, this was a regional response to the severe navigation restrictions and the enforcement of taxes long evaded (Albertson 1914:20-22).

Rich in natural resources and strategic positioning, this new land not only created tensions between settled inhabitants and their absentee leaders, but also evoked in mother England a fierce desire to retain control of said resources and was instrumental in the American Revolution. Settled for nearly a century, residents of the Albemarle region were readily available to fight in the War for American Independence. Sources indicate, however, that Pasquotank County was not a large contributor to the colonists' cause when fighting erupted in 1775. Pasquotank, which included territory that would soon become Camden County, mustered only two regiments with the majority of officers coming from the eastern side of the river (Griffin 1970:13).

This lack of participation may be attributed to the large population of Quakers in Pasquotank County, people known for their pacifistic beliefs. An alternate interpretation for the poor showing cites a concentration of prevailing loyalist attitudes in the area. Soldier Frank Epps, in a report to General Lee, hints at the “most disaffected... Counties of Pasquotank and Currituck” communicating with the enemy (New York Historical Society 1872:384-385). This interpretation lacks contemporary support and there is a third and marginally simpler solution. It is possible that Pasquotank residents’ minimal participation lies in the numbers, or lack thereof. At the time of the first census in 1790, just after the Revolution, Pasquotank County had a population of only 5,497 people (Griffin 1970:13,16). Of this population, only a portion would have even been able to participate in the war. Women and children would not answer the call to arms and male residents were predominantly farmers and fishermen and therefore tied to their respective livelihoods depending on the season.

Elizabeth City History: Establishment and Development

Despite the fact that areas surrounding the Pasquotank River were some of the first areas settled in North Carolina in the late 1660s, Elizabeth City was not chartered until after the American Revolution. The first mention of the city by the name Narrows, in 1764, describes a landing for naval stores and imported goods at the bend in the Pasquotank River (Griffin 1970:19). The Pasquotank Historical Society (1955:54), however, claims that the town was first called Shingles Landing as early as the 1750s. Regardless of the first name, the land at the most narrow point of the Pasquotank River was destined to become a prominent establishment. An enterprising, or perhaps just practical, settler began a ferry service to the opposite shore at some point early in the area’s history, and with this initial maritime activity allowed a small community to emerge, with great potential for future expansion and growth. When Camden

County, including Machelhe Island on the eastern bank of the river, separated from Pasquotank County in 1777, there had already been a ferry in operation for some years (Pugh 1957:44).

Incorporation

Opportunity for expansion came in 1793 when the North Carolina General Assembly determined that the town at the Narrows was to be the terminus city of the Dismal Swamp Canal and chartered the town of Redding (Griffin 1970:26). The name Redding stemmed from a prominent family of highly influential landholders in the newly formed town. It was a short-lived honor, however, as the General Assembly renamed the town Elizabeth (town) the following year. This caused confusion as another nearby town was already called Elizabethtown. To remedy the situation, the Assembly chose to rename the first Elizabethtown to Columbus, and changed Elizabethtown (ex-Redding, Narrows, and ex-Shingles Landing) to Elizabeth City in 1801 (Griffin 1970:7). This was the final name change for the town, and an ambitious one at that. Only time would tell if the small town of Elizabeth City would live up to the great expectations of its name.

The Dismal Swamp Canal promised unprecedented opportunity for growth. When colonists initially settled the region, they did so by coastal or interior routes. The boat route via the Albemarle Sound and interior land routes both gave the Great Dismal Swamp a wide berth. To colonial Americans, the Dismal Swamp represented an impenetrable hurdle to direct access between southeastern Virginia and northeastern North Carolina. It was recognized early on, however, that developing this resource would provide an important connection between the Albemarle Region and southern Virginia and the Chesapeake area for trade, communication, and navigational ease.

Gershom Nimmo undertook an initial survey of the swamp in 1764 for George Washington's Entry, a plan to drain a large tract of land in the Dismal Swamp for productive land. A more comprehensive survey followed in 1783. Believing him interested, Hugh Williamson initiated conversations with George Washington about construction of a canal in 1784 (Simpson 1998:42-44,103). While Washington's initial reaction was one of reticence, Williamson was not disheartened. He persisted, writing to Thomas Jefferson in Paris in December 1784, and was rewarded for his determination when he received positive interest in the venture. Washington's initial concerns over the course of the canal were assuaged when Nickolas Foster completed a pathway for the proposed canal. Foster managed to maintain Lake Drummond's commerce while offering an opportunity to connect the Chesapeake Sound with the Albemarle Sound via the Elizabeth and Pasquotank Rivers, respectively. The Great Dismal Swamp Land Company was quickly formed with the backing of some big name politicians as shareholders, but it still took until 1790 for the act to be passed in both the Virginia and North Carolina legislatures (Simpson 1998:103,105-106). Digging commenced on either end of the canal in 1793 and after many problems and setbacks during construction, the Dismal Swamp Canal opened in 1805 (Brown 1970:57).

Engineers immediately realized that improvements would be needed to make the canal a viable waterway. Single flats with their mere inches of draft were the only vessels able to navigate within the canal (Figure 5.2). The War of 1812 demonstrated the need for an alternate interstate waterway that would bypass local blockades. Disappointingly, the Dismal Swamp Canal failed to provide that alternate trade route. It was June 1814 before a vessel other than a shingle flat successfully navigated the canal (Brown 1970:57).

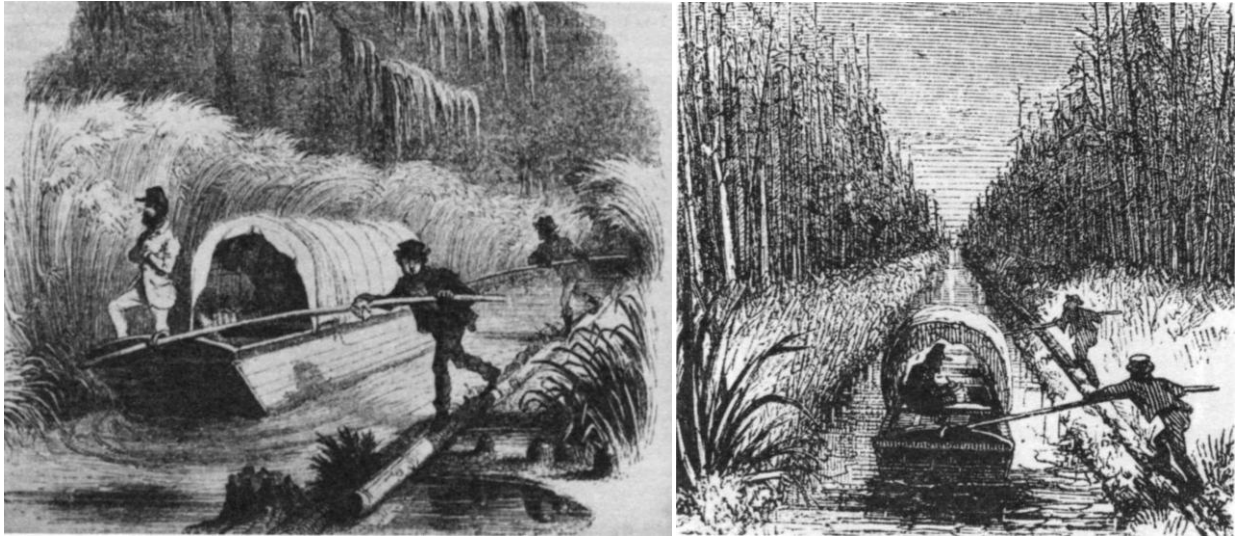


FIGURE 5.2. Example of early canal use. Open flats were often propelled by poling or drawn by horses on the tracts that paralleled the canal (Brown 1970:81).

With the opening of the Dismal Swamp Canal, Elizabeth City was able to overcome the biggest hurdles for coastal North Carolina towns. Lack of deep-water ports, shifting sandbars that rearrange coastal inlets after heavy storms, and the treacherous Outer Banks had been detrimental to the development of many harbors along the coast, including Elizabeth City.

Completion of the canal not only opened an intracoastal waterway for trade between the Mid-Atlantic States, as mentioned earlier, it also provided access to harvest natural resources such as Bald Cypress, Black Gum, Juniper, and Pine trees capable of supplying a number of local forestry industries (Federal Writers Project 1937:89-91). A number of enterprising business people anticipated the economic opportunities that would accompany the completion of the Dismal Swamp Canal, and started companies to exploit those prospects. Participation in North Carolina's largest industry, naval stores, became the driving force for Elizabeth City's growth.

The canal, however, required continuous upkeep and the revenue from tolls were insufficient to fund maintenance. As early as 1819, Virginia hosted multiple lotteries to fund canal maintenance and improvements. The Army Corps of Engineers deepened the canal in an 1826 contract (Brown 1970:48-49,51). This allowed sailing vessels to navigate the waterway and

increased the volume and diversity of vessels that could utilize the inland connection to the north. Elizabeth City's budding industries such as lumber, tar, shingles and staves, cotton, corn, fishing, and tobacco were able to expand and profit in the early 1800s from the increase navigability of the canal (C.E. Weaver Series 1915:1-22).

At its incorporation in 1793, Elizabeth City's commissioners organized a well-structured plan for the town layout. They divided the original fifty acres bought from Elizabeth and Adam Tooley into $\frac{1}{4}$ acre lots on the waterfront and $\frac{1}{2}$ acre lots behind those, with main roads no less than 56 feet across and side streets no less than 33 feet across (Figure 5.3) (Griffin 1970:26). As population increased, citizens built houses in an ever-widening arch from the downtown.

General stores were necessary to supply the growing town, and a myriad of businesses such as blacksmiths, cobblers, and carpenters were established to support daily life. Churches were a foregone conclusion in early Elizabeth City, and schools were a natural addition to any town with a concentration of families. Religion, and the physical manifestation of that, the church, follows people wherever they settle (Griffin 1970:101). While the Church of England was the official church of North Carolina, there were significant populations of Quakers, Presbyterians, and Baptists in the state as well.

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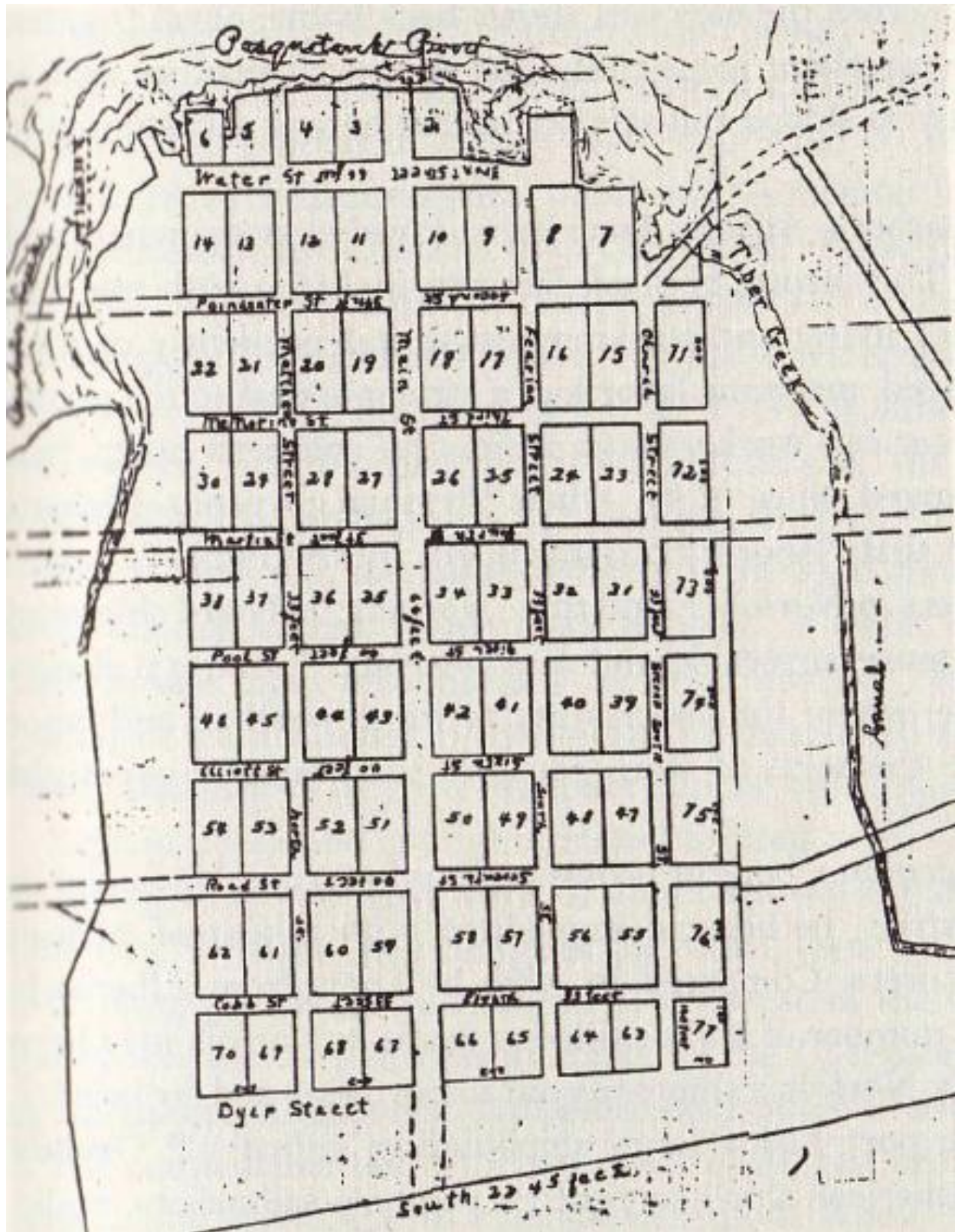


FIGURE 5.3. Original city layout from 1793. This map dates to 1830 and demonstrates the restrained growth from 1793 to 1830 (Cecelski 2001:35).

Additionally, Elizabeth City had to build warehouse space and shipping facilities to organize and facilitate the distribution of the goods arriving from the north. New industries such as lumberyards and mills to process wood products, and shipyards to build vessels capable of navigating the shallow canal waterway were built to exploit the resources exposed by the Dismal Swamp Canal (Griffin 1970:74-78). With a safe interior waterway linking the Chesapeake Sound with the Albemarle Sound and beyond, Elizabeth City was poised to benefit from the increase in river trade.

Not everyone was entirely delighted by the success of the Dismal Swamp Canal. In a 10 August 1819 letter submitted to Hamilton Fulton, Principal Engineer for the state of North Carolina, Archibald D. Murphey, a pro internal improvements politician, lamented the exporting of goods produced in northern North Carolina to both South Carolina via the Pee Dee River and Virginia via the canal. He argued that this exportation made North Carolina appear a poor state in the union and without a sufficient market at home (Hoyt 1914:142). Murphey distrusted reliance on exterior sources and proposed that North Carolinians focus their wealth within their own borders through an internal canal system to emerge as a stronger state. Murphey not only identified the geographical divisions within North Carolina, created mainly by the river systems, and proposed using those river systems for the good of the state, but he also brought the issue to the attention of the person who could act upon his suggested solution. Had Fulton acted upon Murphey's suggestion perhaps North Carolina could have emerged from its "Rip van Winkle" state of retarded growth and development.

While Murphey lobbied for statewide internal improvements, Elizabeth City was undergoing a series of their own improvements. The county seat for Pasquotank County moved from Nixonton to Elizabeth City on 3 June 1800. The decision to relocate the center of

government was instrumental to the steady growth Elizabeth City experienced at the turn of the 19th century. The courthouse held quarterly sessions in March, June, September, and November for county residents to conduct necessary legal business including recording wills, deeds, apprenticeships, and selecting guardians (Griffin 1970:49,51). Enterprising local merchants took advantage of these occasions of markedly increased population in town and erected shops to sell their wares or refreshments for those attending the session. This gave rise to boarding and lodging houses, as well as the necessity for restaurants and hostelryes.

Ante-bellum Elizabeth City

According to U.S. Census information from 1800 to 1860, Elizabeth City's population increase mirrored Pasquotank County's overall growth. Population within the county gradually increased from 1800 to 1830, while during the period of 1830 to 1860 Pasquotank County's growth rate reached a plateau. As the middle of the 19th century approached, Elizabeth City's population reached a respectable 1,000 inhabitants and continued to increase through 1860 (Lefler and Newsome 1963:400). A dramatic population decrease appeared in the 1870 census, but Elizabeth City rebounded throughout the next 30 years and by the turn of the 20th century, claimed a population of 6,343 within the city limits (United States Census Bureau 1800s).

These population trends are explained by the culmination of a number of elements. In the early decades of the 19th century, North Carolina's population growth rate had been slowing as expansion west and south drew people from the state, a trend that was felt from the largest city to the smallest village (Watson 1984:219). This slower growth rate is visible in the Pasquotank County statistics from 1810 to 1860. An economic depression also hit the United States during this slower growth period, 1857, when excessive speculation in railroads and canals caused a panic and bank failures (Huston 1987). Civil War casualties and relocation following close on

the panic's heels curtailed population growth in Elizabeth City, which accounts for a dramatic decrease in population between 1860 and 1870, from 1,798 residents down to 930. Elizabeth City's population rebounded during the decade of 1870 and continued to grow thereafter. Introduction of the railroad in the early-1880s contributed to the improved economic atmosphere of the city as well as providing the opportunity for immigration into the area. Elizabeth City's population growth throughout the end of the 19th century and throughout the 20th century will be discussed in depth in the city's main *conjecture* in Chapter Six.

Elizabeth City had enjoyed a slow but steady industrial and population growth leading to the Civil War. The original city limits remained essentially the same throughout 1830, but increased industrial success influenced the town's expansion to new limits by 1851 (Figure 5.4). Personal financial records provide the names of some of the more obscure business owners during the middle of the century. Joseph F. Saunders had an establishment on Poindexter Street near Main Street where he made carriages, buggies, and wagons. H.O. Hill was a manufacturer and dealer of tin and sheet iron works, including metal roofing and guttering, located on the prime Water Street real estate. C.C. Allen and Chas. H. Robinson were two grocers offering items such as oil, coal, paint, hardware, stoves and tin ware, limes, and queensware (Cook Family Papers 1866-1886; Timothy Hunter Papers 1806-1906).

While the ante-bellum city was enjoying the spoils of economic growth and prosperity, there was no lack of hardships in daily life. Medical facilities were minimal to non-existent in rural North Carolina during the 1800s. Towns would often share doctors with other towns and sometimes, in extreme cases, the doctor would have patients spanning multiple counties. Childbirth was one of the most hazardous experiences a woman could go through, and before the advent of modern medicine, there was a high infant mortality rate. Patient records of Dr. Joshua

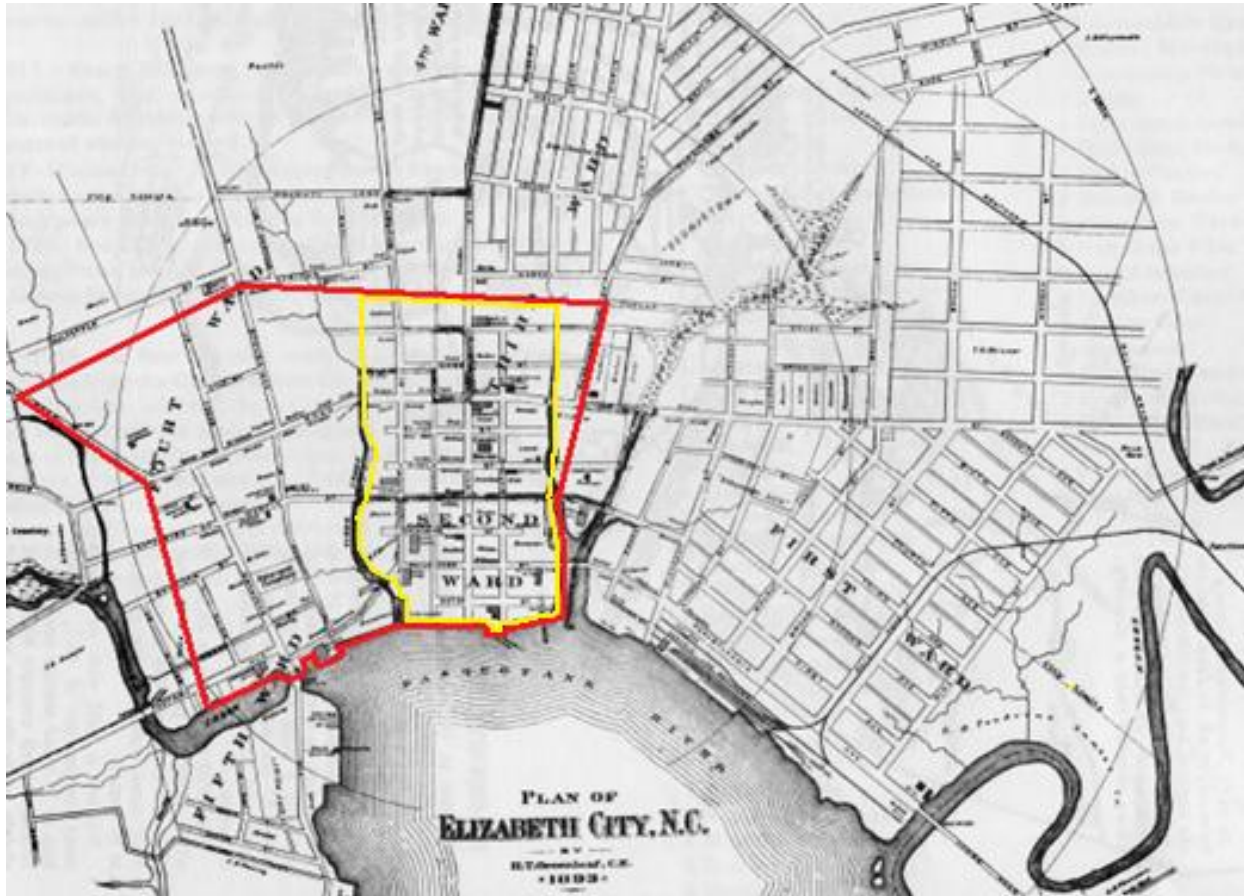


FIGURE 5.4. Elizabeth City Boundaries expansion from 1830s, the yellow outline, to the boundaries in 1851, the red outline. The map shows further expansion by 1893 (Griffin 1970:62-63).

Judson Davis, a physician practicing in Pasquotank County late in the century, illustrate the banality of the dangers of childbirth and children's health in the 1800s. For every female patient Dr. Davis maintained records containing statistics on miscarriages and the number of children both living and deceased (Elizabeth City Papers 1887-1933).

Lack of adequate medical facilities was not the worst danger citizens faced, however. Fire was the most feared occurrence in any town where closely built structures populated such a small space. In 1832, Elizabeth City passed an ordinance requiring monthly cleanings for chimneys during any months in use (*Elizabeth City Star* 1832). This fire prevention statute was critical in a town where people built structures primarily of wood and in close proximity to one another. Residents used fire for cooking and heating the home, and business such as blacksmiths,

coopers, and wagoners needed fire to run their business making fire within city limits unavoidable. In 1858, the Legislature allocated \$6,000 for construction of three water towers for the express purpose of extinguishing fires within Elizabeth City limits (Griffin 1970:64-65). It was this last precaution that would save the entire city from succumbing to the fires that were to come in 1859 and 1860.

Elizabeth City experienced a set of fires in early 1860 that were particularly devastating. The *Fayetteville Observer* (1860) reported in their Thursday, 16 February 1860, edition that a fire in Elizabeth City on 13 February caused the loss of approximately forty houses in the blaze. The fire began in Mr. T.R. Cobb's new warehouse and spread outward causing an estimated \$40,000 in damages. In the pre-railroad city, this news reached Fayetteville reporters via the stagecoach running from Elizabeth City to Norfolk. Just over a week later, *The Weekly Raleigh Register* (1860b) ran a front-page article relating the horrors Elizabeth City citizens were experiencing with the recent fire. While the reporter mistakenly reported the fire as occurring on Tuesday, 21 February, the names of those affected by the blaze corresponded with the 16 February article from the *Fayetteville Observer* (1860) thus confirming that it was indeed one fire, not two.

One month later, almost to the day, Mr. W.H. Clarke's machinery shop on Water Street caught fire early in the morning on 17 March causing significant damage and panicking citizens who so recently endured great loss (*The Weekly Raleigh Register* 1860a). Both the February and March fires were thought to be the work of arsonists and the Elizabeth City Mayor posted a reward of \$2,500 for the arrest of the incendiary (*The Weekly Raleigh Register* 1860b). *The Weekly Raleigh Register* (1860c) featured an article on 22 February that contained remarks concerning the current Elizabeth City tragedy in light of another fire that consumed the city a

year before as well. These contemporary records of names associated with their specific businesses personalize the events portrayed in newspapers statewide and make history more tangible.

In strict economic terms, the fires destroyed companies and supplies creating an interruption in the city's steady industrial growth, but there is a personal aspect as well. These were individual business owners, who, for the most part, had their entire livelihood based upon the success or failure of their business. If the insurance money was insufficient to cover the cost of rebuilding their company, they would have to start from square one, if at all. Newspaper accounts poignantly demonstrate the dangers of fire within such a closely built city, and the hazards and harsh realities of life for residents in the ante-bellum city.

Elizabeth City's economy endured another large blow with the completion of the Albemarle and Chesapeake Canal. The Dismal Swamp Canal had been in operation without equivalent competition for almost fifty years. Technology finally out-stripped the canal's capacity with the appearance of steam-driven vessels. Engineers designed the Albemarle and Chesapeake Canal to be a modern interstate waterway, specifically to accommodate newly prominent steam-driven ships. Construction for the A&C, as it was commonly known, was completed in 1859. Advantages for shipping through the A&C canal included a deeper draft of 6 feet, wider canal at 40 feet, only a single lock rather than the seven in the Dismal Swamp Canal, and direct access from Norfolk to the Albemarle and Currituck Sounds, bypassing the twists and turns of the Pasquotank River (Army Corps of Engineers 2007:1-2). The new canal began drawing business from the Dismal Swamp Canal, immediately causing business to lag, however, the impending Civil War would soon give both canals important roles in the fight between north and south.

The American Civil War

The Confederacy heavily utilized both the Dismal Swamp and Albemarle & Chesapeake Canals early in the war, thereby thrusting Elizabeth City back into a role of strategic maritime importance. Supplies shipped via the canals were instrumental in supporting Confederate troops, as acknowledged in correspondence between Commodore Lynch and Flag-Officer F. Forrest, 9-10 February 1862 (U.S. Navy Department 1897:765-766). The Battle of Roanoke interrupted the supply transports and ensuring the supplies never reached the canal.

The fall of Roanoke Island to Union forces on 8 February 1862 initiated a series of events that would affect Elizabeth City. Flag-Officer L.M. Goldsborough and Commander S.C. Rowan offer contemporary accounts of the events leading to and during the Battle of Elizabeth City. Goldsborough charged Commander Rowan with the task of following the surviving rebel steamers to Elizabeth City after the Battle of Roanoke. He was to intercept the rebels and, upon successful completion of that task (a foregone conclusion based on their most recent experiences with the Confederate “mosquito fleet”) to damage the entrance to the Albemarle and Chesapeake Canal (U.S. Navy Department 1897:604-605; Scharf 1894:390).

Rowan engaged the rebel forces off Cobb’s Point on 10 February 1862 at 9:06 am and succeeded in sinking all but one steamer, which he captured following the brief but decisive encounter (U.S. Navy Department 1897:604-605; Scharf 1894:390). Two steamers evaded the battle entirely and fled north to Norfolk for reinforcements. The CSS *Beaufort* succeeded in escaping to Norfolk, but the CSS *Appomattox* reached the first lock at South Mills only to discover that the vessel was two inches too wide to enter the canal. The captain decided to set fire to the ship rather than allow the Federals to capture it (Brown 1970:98).

Archaeologists have recently been able to uncover a small aspect of this history. Following a long search, amateur maritime archaeologists positively discovered the remains of the CSS *Appomattox* in the Pasquotank River in the fall of 2009. Further, the NCUAB located and recorded the C.S.S. *Black Warrior*, one of the rebel ships sunk during the battle of Cobb's Point, during the 1999 and 2000 field seasons (Lawrence and Henry 2002:3-4).

Commander Rowan was also responsible for the destruction of the fortification that local rebels built on Cobb's Point, a defensive project to which Elizabeth City contributed in the previous year. The city contributed lumber to the fortification that was to be the last line of defense from Union naval forces. When Roanoke Island fell, Elizabeth City initiated the emergency preparations they had put into place over the last year. Hearing the reverberating cannon fire from the battle, the local militia, held in readiness since the end of January 1862, was mobilized. The call to arms conflicted with the order to see wives, children, and families to safety, thus the militia could not organize in sufficient time, a situation that has been blamed for the fall of Elizabeth City (Meekins 2007:27). Rather than allow Federal troops the benefit of their city, citizens burned the courthouse and other town buildings in a spontaneous self-destructive decision. Luckily, officials had organized the court records' relocation prior to the destruction of the emblem of Pasquotank County government (Griffin 1970:67-68).

Subsequent attacks on Edenton and New Bern secured Union control in the Albemarle region. The majority of Elizabeth City's inhabitants had fled in the face of Union forces and by the second engagement involving the city, the Battle of South Mills, few citizens had returned. In an attempt to damage the Dismal Swamp Canal, Union forces landed at Elizabeth City on 19 April 1862 and proceeded to march north to join Union soldiers already in place. The outcome of this battle is less definite than the first as both sides claimed victory for the engagement.

Confederate troops maintained their position and denied access to the canal despite inferior numbers and Union troops withdrew from exhaustion and low ammunition but claimed that the Confederates had to give up position (Meekins 2007:38-39). The Union victory at Norfolk shortly after the Battle of South Mills allayed any apprehension over Norfolk sending an ironclad through the canal to engage the Union Navy.

For a relatively small city, there were a number of significant Civil War battles in and around Elizabeth City. This stems from the city's strategic location. The Albemarle Sound could be reached via the lower Pasquotank River and access to the Dismal Swamp Canal via the upper Pasquotank River was a direct connection to Norfolk and the Chesapeake Bay area. Access to a large portion of the southeastern seaboard made Elizabeth City a key occupation point for both Union and Federal troops. In this instance, Elizabeth City's geographic location and related resources were a detriment to its development. The Civil War severely hindered the city's forward progress and in some areas, such as the DSC's condition, caused significant setbacks that would require massive rebuilding for Elizabeth City to regain its pre-war status.

Reconstruction

Elizabeth City emerged from the Civil War worse for wear. Repeated occupation and maltreatment from Rebel and Union forces throughout the war was trying on the town's population both spiritually and physically. The Civil War was an ugly affair, pitting neighbor against neighbor, and Elizabeth City, despite an overall southern loyalty, was not exempt from these trials. Lincoln's Emancipation Proclamation initiated another set of issues for Elizabeth City between the white population and their former slaves (*Harper's Weekly* 1863). Change, especially immediate change at gunpoint, such as the end of slavery, is a difficult pill to swallow and Elizabeth City citizens rose to meet that challenge with varying degrees of success. Racial

relations were tenuous following the cease-fire and “reconstruction” after the Civil War pertained to restructuring social equilibriums in addition to economic and physical rebuilding.

The spring of 1865 began the rebuilding process in Elizabeth City, one that would be slow to gain momentum. The multiple fires that ravaged the town in 1859, 1860, and 1862, and the evacuation of the city that preceded the latter left little time or opportunity to rebuild lost structures and businesses. Replacing lost structures became the initial focus after the war. Renewal of the maritime industry was also highly important for Elizabeth City to reclaim the title of “Eastern Emporium of North Carolina” that it had held earlier in the century (*Elizabeth City Star* 1831). The recovery and rebuilding process, especially for the maritime transportation industry, would extend into the beginning of the 20th century.

Elizabeth City’s relative maritime position in northeastern North Carolina greatly influenced its Civil War engagements. Union and Confederate factions’ desire to control interstate waterways between Albemarle Sound and Chesapeake Sound via the Dismal Swamp and Albemarle & Chesapeake Canals was a driving force for the Battle of Elizabeth City and the Battle of South Mills. The town’s economy suffered greatly from population desertion, destruction by fire, wartime pillaging, and restrictions during Federal occupation. Elizabeth City also endured its share of social instability following the Emancipation Proclamation, an outfall of war that took longer to fix than the physical destruction to the landscape. After the large-scale setbacks created by the Civil War, Elizabeth City’s industries demonstrated their ability to lead the city’s Reconstruction when they experienced financial success amid the mistrust of new railroads and unreliability of the Dismal Swamp Canal that defined the end of the 19th century.

Modern Elizabeth City

The dawn of the 20th century witnessed a rebirth of maritime commerce extending out from Elizabeth City that rivaled ante-bellum prosperity. A string of worldwide crises, WWI, the Great Depression, and WWII, and local influences, such as the rise in popularity of railroad transportation for industrial goods, soon hampered this economic boom. The 1950s marked a turning point for Elizabeth City's maritime economy. Railroad technology and popularity, if not the cost, replaced tradition waterborne commerce via canal boats, barges, and tugboats as the accepted and expected transportation method for most industries (Jeb Stuart 2009, elec. comm.). The Dismal Swamp Canal, and for the most part, the Pasquotank River, and Albemarle Sound became obsolete waterborne trading routes during the mid 20th century.

In Elizabeth City, the river underwent a functional evolution from the once life-sustaining commercial shipping industry to a source of recreational activity. The invention of the Moth boat in the 1920s led to annual races between local yachting clubs and gained international fame throughout the 1930s, 1940s, and 1950s. The Moth Boat Regatta, traditionally held the third Saturday in September, continues to be an annual event in Elizabeth City, and is widely attended with widespread participation (Museum of the Albemarle 2010).

The Dismal Swamp Canal has also experienced a radical change in function. To quote from the Dismal Swamp Canal Welcome Center website, "The Canal is listed in the National Register of Historic Places and has been designated a National Civil Engineering Landmark, honors worthy of its colorful past" (Dismal Swamp Canal Welcome Center (DSCWC) 2010). The canal is now a 22-mile long tourist attraction for pleasure boaters for whom the locks are operated four times daily at both the north and south ends of the canal, Deep Creek, Virginia, and South Mills, North Carolina, respectively (DSCWC 2010).

Baring the nationwide depression years from 1930 to 1935, overall economic prosperity flourished in area for the first half of the 20th century. The shift in farming practices from “the old standard ‘cotton and corn’” to agricultural variety and crop rotation. Soy beans, lespezea, and hybridized corn were commonly grown, and the grain production was on par with farms in the Mid West. Implementation of machine farming in the wake of the post Great Depression labor shortages revolutionized the agricultural industry and helped farmers realize harvesting efficiency and optimal profits. Additional farming ventures included the introduction of blooded livestock for meat and dairy production to supplement the traditional hog and sheep farms (Wood 1963:13). Forestry and the lumber industry are also included in the agricultural industry, and in 1966, revenue from lumber represented approximately 5% of all farm products sold. By the late 1960s, Elizabeth City lumber companies were practicing responsible lumber harvesting to sustain long-term industry needs that have shifted production from milled hard wood to soft wood products like pulp and paper (Virginia Electric and Power Company 1967:13).

Modern Elizabeth City supports numerous surrounding towns and villages and therefore must be able to meet their collective consumer needs. In addition to the farming/harvesting industry surrounding the city, Elizabeth City also has large retail, service, and manufacturing industries located within the city limits. Department stores, restaurants, hotels, car dealerships and mechanics, medical facilities, building contractors, law services, and grocery stores are just some of the modern businesses that have taken root in Elizabeth City throughout the second half of the 20th century, and continue to serve city residents, locals, and visitors alike in the first decade of the 21st century. Nicknamed the Harbor of Hospitality, Elizabeth City is able to honor its maritime-focused heritage without wallowing in the past. From its current financial success, it

is evident that Elizabeth City is able to grow with the changing economy without forgetting its maritime history.

Conclusion

Evaluating Elizabeth City's history on Braudel's largest tier of temporal rhythms, the *longue durée*, first identified the geographic and environmental factors that made the Albemarle Region optimal for human habitation. Reviewing long-term human occupation in northeastern North Carolina then revealed the ways in which these geographic features and environmental factors influenced the course of this area's history. Analysis determined that geography played a large part in settlement patterns, political and social affiliations, regional communication, and trade patterns for Native Americans, European colonists, and established Elizabeth City citizens alike. Finally, looking specifically at human interaction with the maritime environment discovered that throughout Elizabeth City's 217 year history, and stretching back through European colonization and Native American settlements, inhabitants of the Coastal Plains, specifically the Albemarle Region, have continuously relied on the maritime environment for sustenance, transportation, communication, and economic development.

One specific period of development within the *longue durée* directly influenced the creation of the Elizabeth City Ships' Graveyard. Technological advancements, economic fluctuation, and a change in social perceptions during the years of 1881 to 1950 directly affected the abandonment complex. Act Two: The Main *Conjoncture* is the subject of the next chapter of this thesis. Close examination of the city's development during this critical period, paying special attention to changes in waterborne technology, economic cycles of prosperity and loss, and social identity with the maritime environment, will identify the prevailing conditions under which the ships' graveyard was created.

CHAPTER SIX: ACT TWO: THE MAIN *CONJONCUTRE*

Introduction

Fernand Braudel defined *conjonctures* as small periods of history that represent divergences from normal behavior (Knapp 1992:6). The *conjoncture* immediately related to the creation of the Elizabeth City Ships' Graveyard involves the years from 1881 to 1950. This period of history witnessed many technological advancements, economic change and upheaval, and social evolution particularly in resident's perception of the maritime environment and its role in the city's operation and development. Chronicling these changes throughout the 69-year *conjoncture* will highlight the prevailing conditions that precipitated the creation of the Pasquotank River abandonment complex. The smallest level of history, *l'histoire événementielle*, in this case individual abandonment events, will then be placed into the larger context of the prevailing culture in Chapter Seven.

Beginning around 1880, Elizabeth City experienced a "new wave of prosperity" that, save the depression years of 1930-1935, continued into the mid-20th century (Wood 1967:13). The source of this prosperity can be ascribed to multiple sources such as advancements in the transportation industry, industrial and commercial expansion, and the successful growth of key municipal projects. These events were instrumental to Elizabeth City's growth and development from 1881 through the first half of the 20th century.

This chapter addresses the multiple contributing factors for Elizabeth City's growth and development categorically rather than chronologically. While Elizabeth City's growing prosperity during the 1881 to 1950 *conjoncture* is attributed to many factors, some elements were more influential than others. Influential elements are discussed in order of perceived importance. Transportation improvements were by far the most influential factor on Elizabeth

City's development and the creation of the ships' graveyard. The introduction of the Norfolk & Elizabeth City Railroad in 1881 and the reopening of the Dismal Swamp Canal in 1899 were the two main events that improved transportation, however, steamship services, developments in ship construction, and the personal automobile were also key advancements.

Industrialization was the second most influential factor in Elizabeth City's growth during the main *conjoncture*. Increased manufacturing companies supplemented the city's previous agriculturally-based export commodities and supported the city's growing population. Mechanization of Elizabeth City's agricultural industry was also an integral component of the city's overall growth. Commercial expansion followed in the wake of the industrialization, providing a venue to market goods locally to an ever-increasing economic base that extended beyond Elizabeth City's borders to the surrounding rural towns.

Least influential on the creation of the Elizabeth City Ships' Graveyard, but tantamount to the sustained growth of the city, was the creation and development of key municipal projects. The urban expansion that accompanied transportation, industrial, and commercial improvements necessitated the efficient operation of civil engineering projects such as telephone and telegraph service, sewage and water treatment facilities, and maintenance on the ever-expanding road system.

Transportation Improvements

Transportation is essential for the development of any society. The dawn of the 20th century witnessed an explosion of advancements in transportation including the production of automobile prototypes, a transcontinental railroad system, the shift from wooden to metal ship construction, increasing reliance on steam-driven vessels for commercial shipping and civilian transportation, and man's first forays into aviation. Establishing railroad service in Elizabeth City

and reopening an improved intracoastal waterway strengthened economic ties with northern markets and initiated a period of rapid development.

Railroads and Steamships

If the construction of the Dismal Swamp Canal was responsible for the first big economic boom for the city in the early-1800s as claimed in Chapter Five, the arrival of the Norfolk & Elizabeth City Railroad in 1881 initiated a second population and industrial explosion in the late-1800s. Like much of the country during the 1880s and 1890s, railroad expansion in the south was rampant. Southern states experienced the greatest increase in laid railroad track of any other region within the continental U.S. followed closely by western states and territories (Figure 6.1) (Depew 1895:111). The Norfolk & Elizabeth City Railroad's expansion into eastern North Carolina in 1881, directly contributed to the decade of southern railroad track expansion.

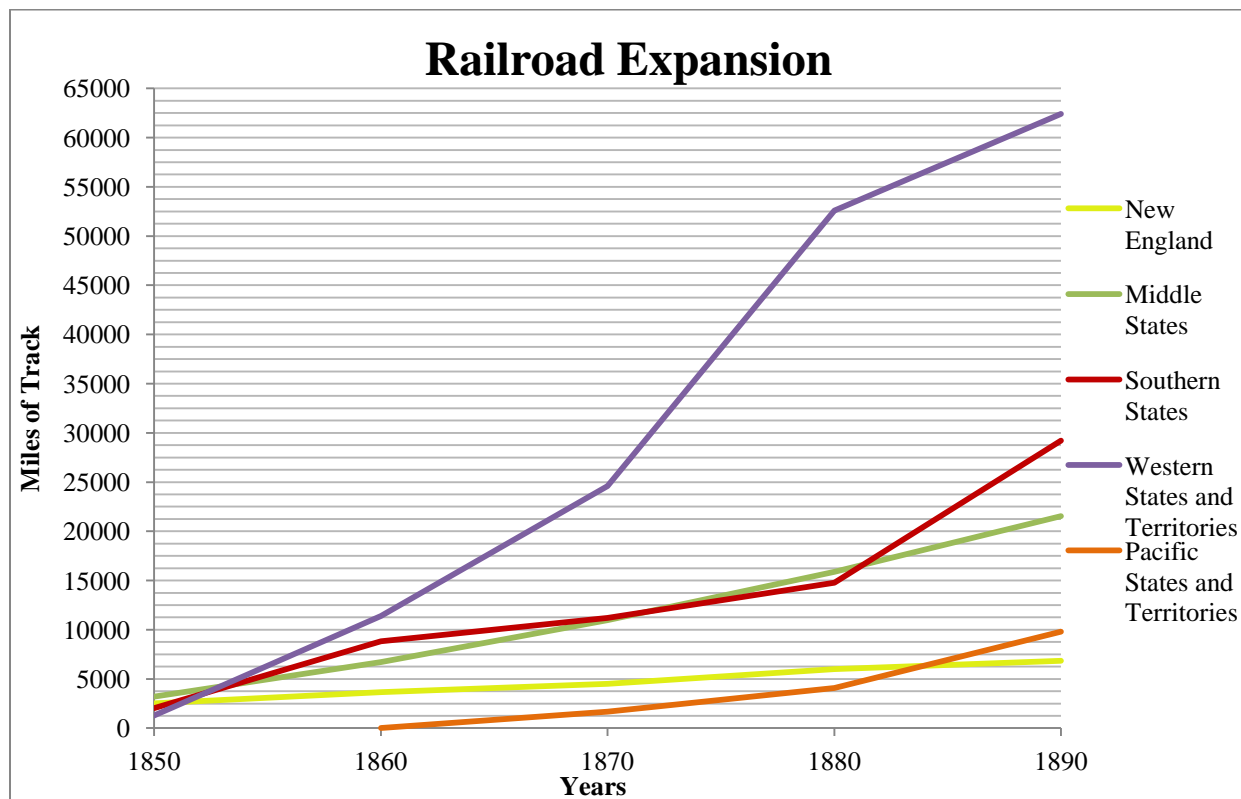


FIGURE 6.1. Railroad track expansion in the United States during the latter half of the 19th century organized by geographic regions (Depew 1895:111).

The Norfolk & Elizabeth City Railroad skirted the city to the west but had an offshoot track that terminated at present day Poindexter Street, just yards from the waterfront (SMPL 1885). The railroad company established a contract with the Old Dominion Steamship Company to operate services from Elizabeth City to New Bern and Washington, North Carolina for a period of five years (Butchko 2008:1.5.1). This allowed passengers on the Norfolk & Elizabeth City line to exit the train, walk across a single street, and board either the Old Dominion Steamship to continue their passage or transfer to a different steamship line that serviced Elizabeth City.

In 1887, when the contract ended, the newly renamed Norfolk & Southern Railroad established its own steamship line. To combat this competition, the Old Dominion Steamship Company continued their service to New Bern and Washington, North Carolina, but departed from Norfolk rather than Elizabeth City. Old Dominion Steamship's new route also utilized the Albemarle & Chesapeake Canal rather than the Dismal Swamp Canal. This change translated to Elizabeth City's loss of steamship business in much of the Pamlico Sound area. Elizabeth City was able to retain a healthy steam service to the Outer Banks, a popular vacation destination reachable only by boat at that time (Butchko 2008:1.5.1). A 180-foot railroad pier, in use from 1910 to 1931, extended out into the Pasquotank River to deliver passengers from the trains directly to their steamboat connections. Steamboat service from Elizabeth City to the Outer Banks remained healthy through the 1930s until the depression made frivolous travel impossible for the majority of Americans (Butchko 2008:1.6.1). The steamship industry in Elizabeth City crumbled under the economic hardships of the depression and growing popularity of personal automobiles as the preferred mode of transportation. This shift toward personal vehicle use is represented in the increasing number of automobiles registered in the state during the 1920s.

A second railroad, the Suffolk & Carolina line, joined the Norfolk & Southern Railroad in 1904, however, in true railroad industry fashion, Norfolk & Southern Railroad bought out the competition within ten months and reclaimed its position as the only railway provider in Elizabeth City (Coleman 2008:1). Norfolk & Southern built a new passenger station in 1910 that separated the commercial shipping line utilized by many of the lumber and cotton companies in Elizabeth City from the passenger lines.

The railroad industry continued to assume the commercial transportation role the Dismal Swamp Canal had historically provided. A waterborne railroad connection at Edenton, North Carolina created a direct route between Norfolk, Virginia, and the North Carolina towns of Edenton, Washington, and New Bern. The completion of the train trestle across the Albemarle Sound in 1910 provided uninterrupted rail service between Norfolk and the Pamlico and Neuse areas of North Carolina (Figure 6.2). These two expansions skirted Elizabeth City entirely, which severely diminished the amount of north and south bound waterborne traffic through the Dismal Swamp Canal (Butchko 2008:1.6.1).

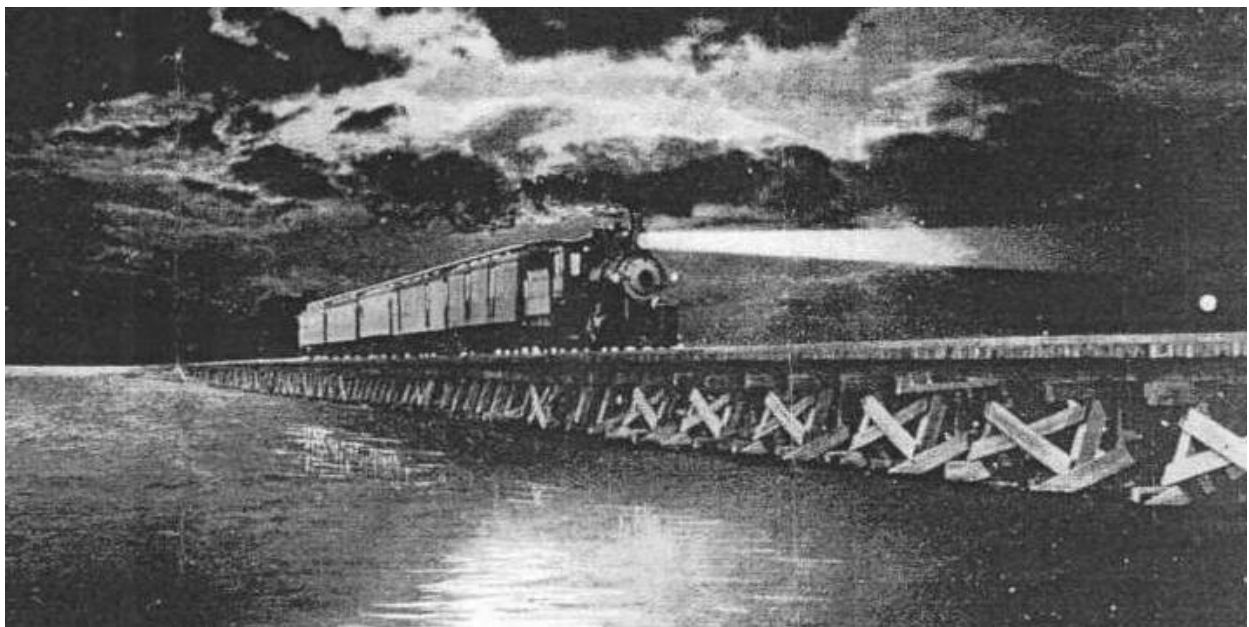


FIGURE 6.2. Albemarle trestle bridge built in 1918 and demolished in the late 1980s (Fisher 2009).

The increased reliance on railroads for commercial transshipment continued throughout the second half of the 20th century (Figure 6.3). North Carolina experienced a 37% increase in revenue from all railroad freight during the 1960s, which included forestry products, agriculture, and manufactured goods. Manufactured commodities and forestry products had the first and second greatest increases in individual markets from 1960 to 1969, a 48% and 38% increase respectively. The growth of the railroad industry seen throughout North Carolina was due, in part, to evolving business practices that shifted shipping business away from waterborne avenues to rail service, much like the practices seen in Elizabeth City and Pasquotank County throughout the first half of the 20th century. The data presented in Figure 6.3 postdates the main *conjoncture* but serves to illustrate the after effects of the shift in commercial shipping practices that occurred from 1881 to 1950.

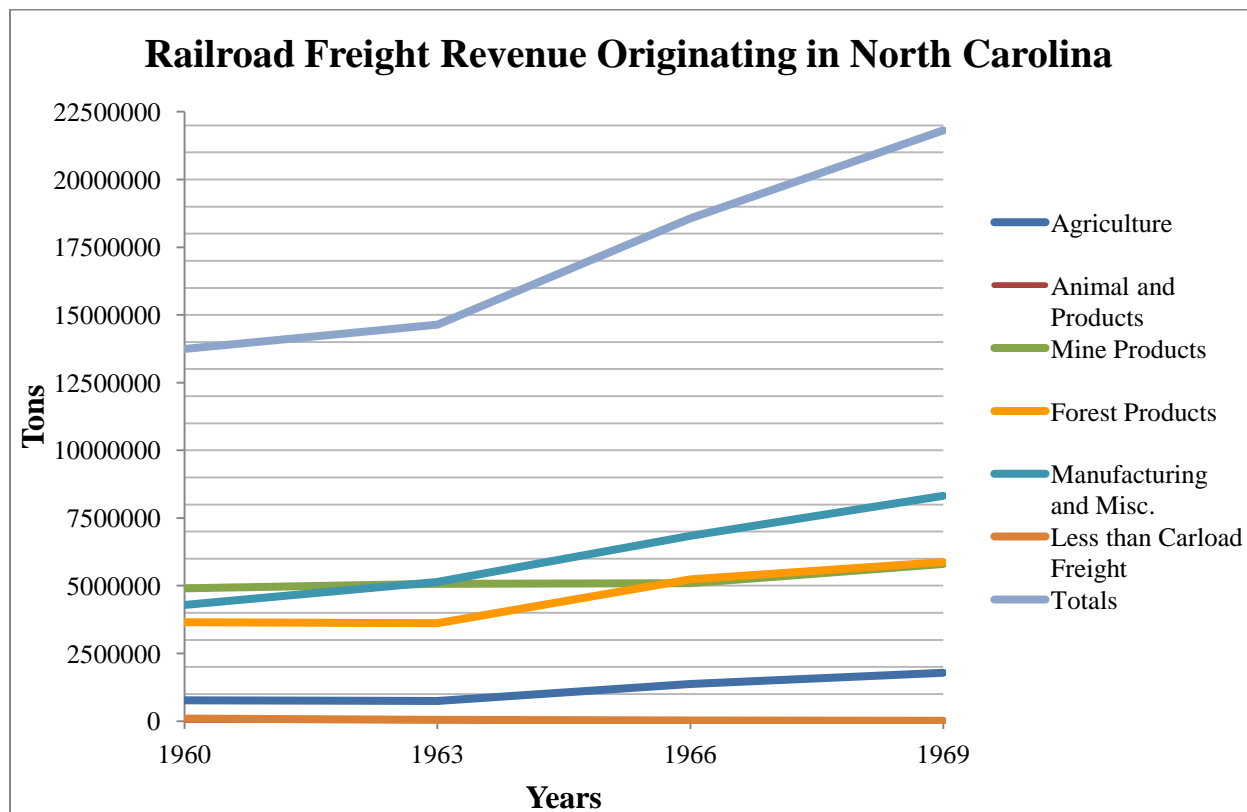


FIGURE 6.3. Railroad revenue for the state of North Carolina during the 1960s (Cheney 1981:445).

Automobiles and Roadways

Technological advancement during the 20th century was continuous and unforgiving. Just as the railroad had assumed much of the Dismal Swamp Canal's business, automobile trucking began to compete with railroads for the commercial transportation business. Personal vehicle registration steadily increased throughout the continental United States during the 1920s. The South Atlantic region, including North Carolina, South Carolina, Georgia, Florida, West Virginia, Virginia, Maryland, Delaware, and the District of Columbia, exhibited an average registration rate when compared to the eight other geographical regions (Figure 6.4). Within the South Atlantic region, however, North Carolina displays the third fastest automobile registration rate during the 1920s (Figure 6.5). The steady increase of personal automobile use throughout the South Atlantic and North Carolina perpetuated the ongoing shift away from reliance on waterborne transportation and contributed to the decrease in recreational use of railway systems.

This statewide and countrywide increase in personal vehicles was greatly influenced by the improved and expanded road systems. Advances in automobile technology outmoded the railways as the primary recreational land transportation method during the second half of the 20th century, and doomed the steamship lines in Elizabeth City that relied primarily on passenger travel to and from the Outer Banks. The completion of the Wright Memorial Bridge in 1930, connecting Currituck Sound to the Outer Banks, rang a death toll for Elizabeth City's already struggling maritime transportation system. Butchko (2008:1.6.1) summarizes the city's lost dependence on the maritime environment for recreational travel in his assertion that "[the] vacationer no longer took the railroad to Elizabeth City, transferring there to a steamer for the journey to Nags Head or Manteo, but motored to the Outer Banks entirely in a private automobile" (see also Stick 1958:245-247) .

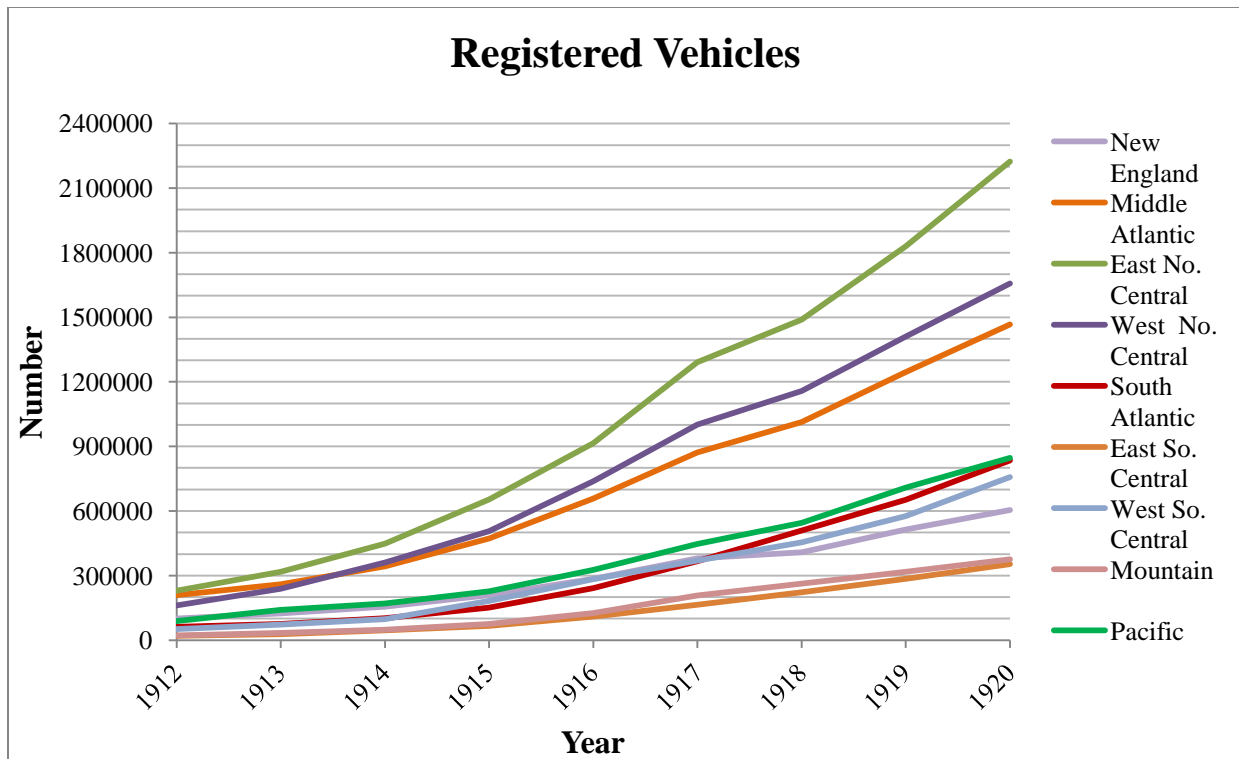


FIGURE 6.4. Vehicle registration by region during 1912-1920 (*The New York Times* 1921). North Carolina falls within the South Atlantic region.

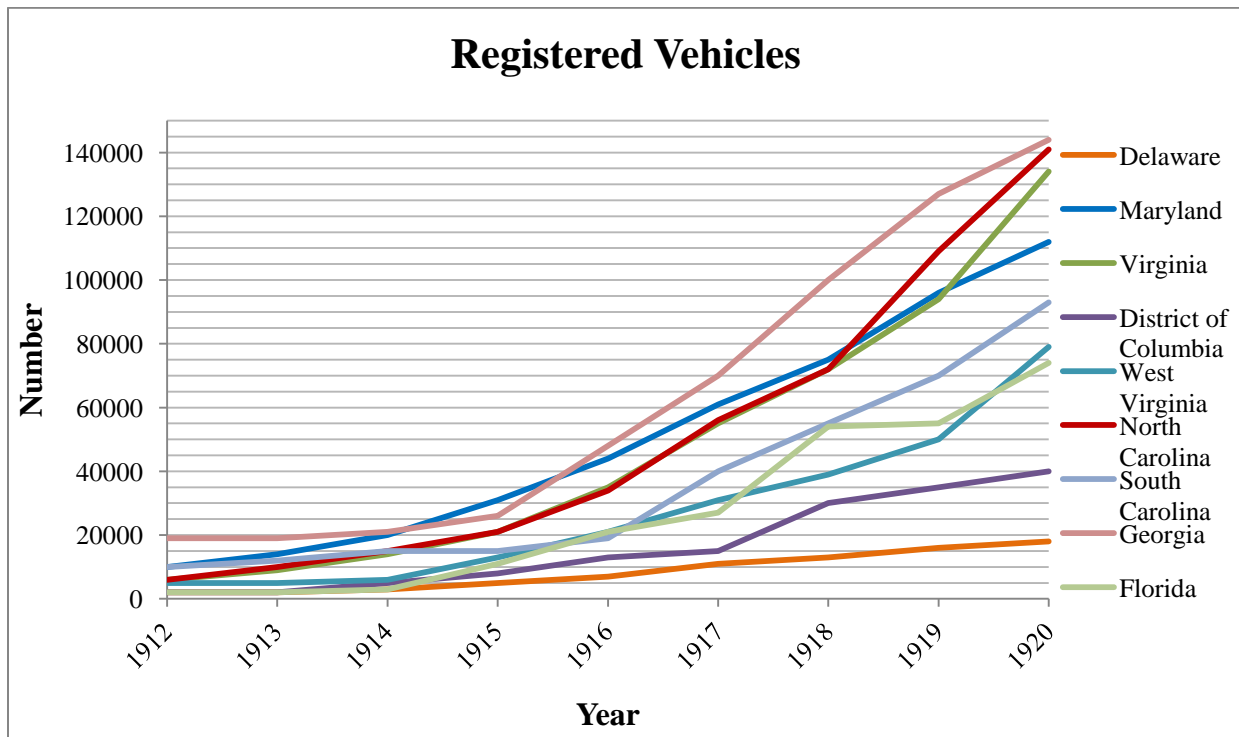


FIGURE 6.5. Vehicle registrations in North Carolina and other South Atlantic states for the years 1912-1920 (*The New York Times* 1921).

Dismal Swamp Canal

At the end of the 19th century, the Dismal Swamp Canal had supported Elizabeth City's economy for almost 100 years. Superb positioning between the entrance of the Dismal Swamp Canal and the main channel of the Pasquotank River created maximum exposure for Elizabeth City to develop maritime industries. Damage from the Civil War and neglect during the post war depression contributed to the Dismal Swap Canal falling into disrepair and becoming un-navigable. The largest hurdle however, was the success of the Albemarle & Chesapeake Canal (A&C). Following the Civil War, the newly completed A&C became the primary waterway for intracoastal travel. Evidence of the shift from the DSC to the A&C is seen in the waterborne transportation statistics for 1889. The A&C cleared 316,793 tons of cargo while the DSC cleared only 78,211 tons of cargo (Brown 1970:154-155). Further evidence demonstrates that the barely navigable DSC influenced the Old Dominion Steamship Company's decision to continue its New Bern and Washington, North Carolina, service via the A&C Canal (Butchko 2008:1.5.1).

The DSC's ability to keep pace with changing technology allowed ante-bellum Elizabeth City to expand their maritime economy to become the "Eastern Emporium of North Carolina" in the years leading to the Civil War. Upkeep on the DSC was unending, and on multiple occasions during the first half of the 19th century, the U.S. Army Corps of Engineers was contracted to organize canal improvements. Improvements included channel widening, lock maintenance, and dredging to deepen the water depth (*The New York Times* 1847). Similar upkeep was needed to complete improvements that would allow larger and more technically advanced vessels to ply the canal waters between Norfolk and Elizabeth City if the DSC was going to regain its previous prosperity during the upcoming century.

The Dismal Swamp Canal underwent many small changes between 1876 and 1899, but a complete overhaul, completed in 1899 by the Army Corps of Engineers, allowed the DSC, and subsequently Elizabeth City merchants, to reclaim a substantial portion of the trade lost to the A&C Canal. Newly constructed locks measuring 40 x 250 feet replaced outdated locks with dimensions of only 24 x 100 feet and 17.5 x 95 feet. In addition to straightening the canal, the depth was increased to 10 feet, bottom width was increased to 40 feet, and surface width was increased to 60 feet along its 22-mile length (Brown 1970:109,143,150). Following completion of the 1899 improvements, the DSC experienced prosperity on par with its ante-bellum volume and by 1906, the DSC cleared 340,135 tons of cargo while the A&C Canal's freight decreased to 98,269 tons (Figure 6.6) (Brown 1970:154-155). The reversed roles heading into the new century heralded good news for Elizabeth City's economy.

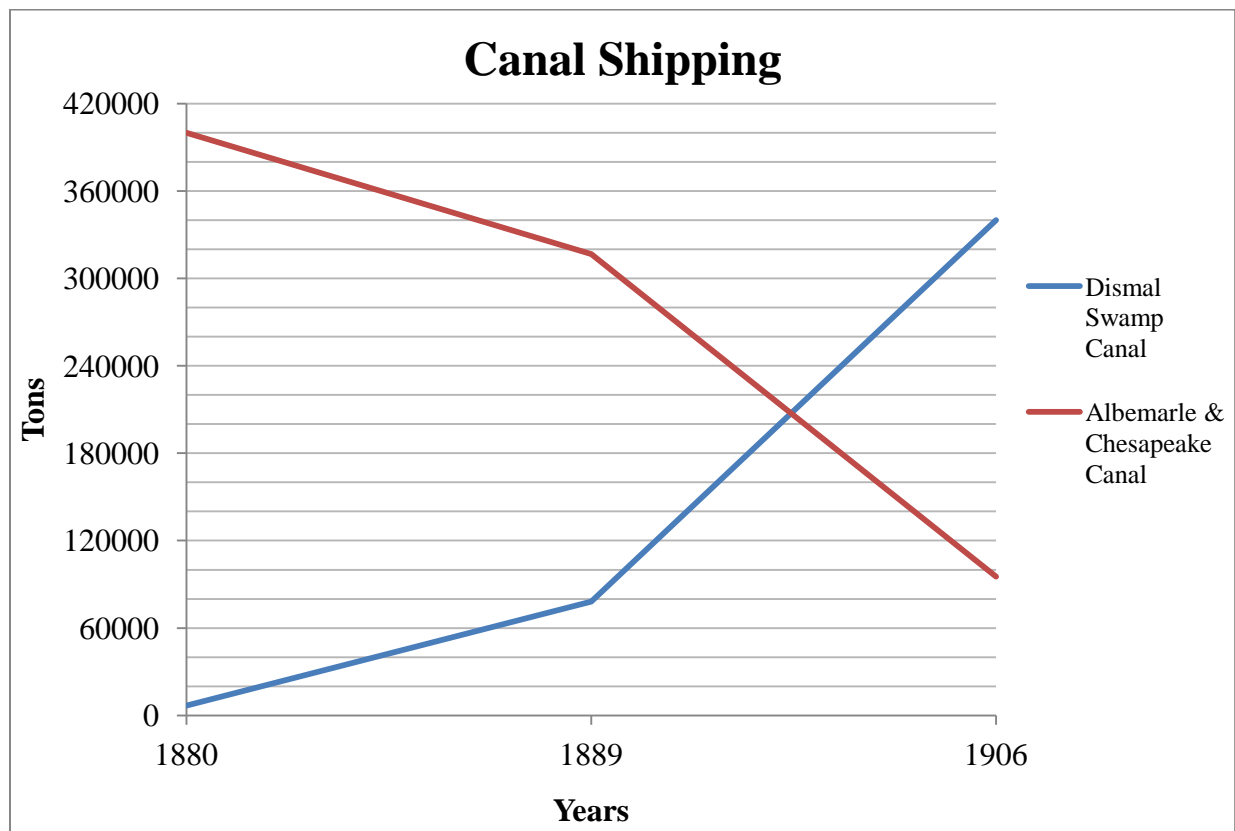


FIGURE 6.6. Tons shipped via canal (Brown 1970:15).

Increased access to northern markets via the new Norfolk & Elizabeth City Railroad route and improved Dismal Swamp Canal established Elizabeth City for unlimited expansion and development. The improved transportation systems created the necessary connections to distribute goods to a wider, more diverse market, and increased the volume of people traveling to or through Elizabeth City that would provide the capital, labor, and ingenuity for the city's further development.

The DSC maintained its advantage over the A&C for 20 years following the 1899 improvements, but in 1911, the United States government bought the Albemarle & Chesapeake Canal and assumed all expenses and maintenance of the newest section of the Intracoastal Waterway (Brown 1970:171). This was a crushing blow for the Dismal Swamp Canal. Who would pay the tolls to utilize the inland route to Norfolk if the A&C Canal offered free access to eastern seaboard commerce? Brown (1970:173) captures the state of affairs for the Lake Drummond Canal and Water Company when he wrote that things, "went from bad to worse... in 1920 when the dam at South Mills broke, letting all the water out of the canal." Two types of watercraft continued to use the Dismal Swamp Canal during the 1920s. Lumber barges and rafts, and recreational power yachts and cruisers 'single-handedly' kept the canal afloat. Personal power crafts utilized the DSC because Elizabeth City was seen as an asset for day-trippers going to and from Norfolk. The city provided a hospitable stopping point to refuel or rest whereas the A&C offered no such amenities within a reasonable distance (Brown 1970:173).

Constant pressure from Dismal Swamp Canal owners paid off when, in 1929, the waterway sold for \$500,000 to the United States government (Brown 1970:175). Improvements continued under federal ownership, and in 1940, the newest set of locks were constructed measuring 52 x 300 feet, a drastic change from the original 9 x 75 foot locks in the 1790s.

Bridges, spillways, and gates were also improved or constructed for the overall improvement of the DSC. Pleasure crafts and recreational boaters were now the majority of canal patrons, the commercial traffic had almost entirely transferred to the A&C from 1911 to 1929 to avoid paying the DSC tolls (Brown 1970:183).

WWII offered a slight increase in DSC commercial traffic. German u-boats operating along the eastern seaboard were devastating all waterborne transportation so President Roosevelt ordered domestic shipping to utilize any and all inland waterways. The A&C Canal, both wider and deeper, received the vast majority of this redirected shipping. Brown (1970:183) insists, however, that the DSC was able to modestly contribute to the final victory despite closures due to draughts during 1942.

Drought plagued the Dismal Swamp Canal from the beginning, but the years of 1952-1953 were by far the most devastating to its operation. Additional closures of varying lengths were required during 1954, 1955, 1957, 1962, 1963, and 1968 because of water shortages (Brown 1970:184). Throughout the 1950s and 1960s, the Army Corps of Engineers repeatedly attempted to close the canal permanently, citing diminishing funding and increasing operational expenses as adequate reasoning, however they have yet to succeed in their quest to unburden themselves of the obligation to maintain the waterway (Brown 1970:187-188).

Industrialization

The industrial boom that accompanied the introduction of rail transportation was vastly significant for Elizabeth City's growth. Access to northern markets gave rise to an explosion of new industries on the eve of the 20th century. As the largest city in Pasquotank County, Elizabeth City's economic practices are directly reflected in the county data. Manufacturing establishments in Pasquotank County grew from 16 in 1880, prior to the railroad's completion, to 34 in 1990,

practically doubling the number of industries (Figure 6.7). This growth of industry is contrary to the trends seen throughout North Carolina as a whole where the number of manufacturing establishments decreased slightly between 1880 and 1899 (Figure 6.7).

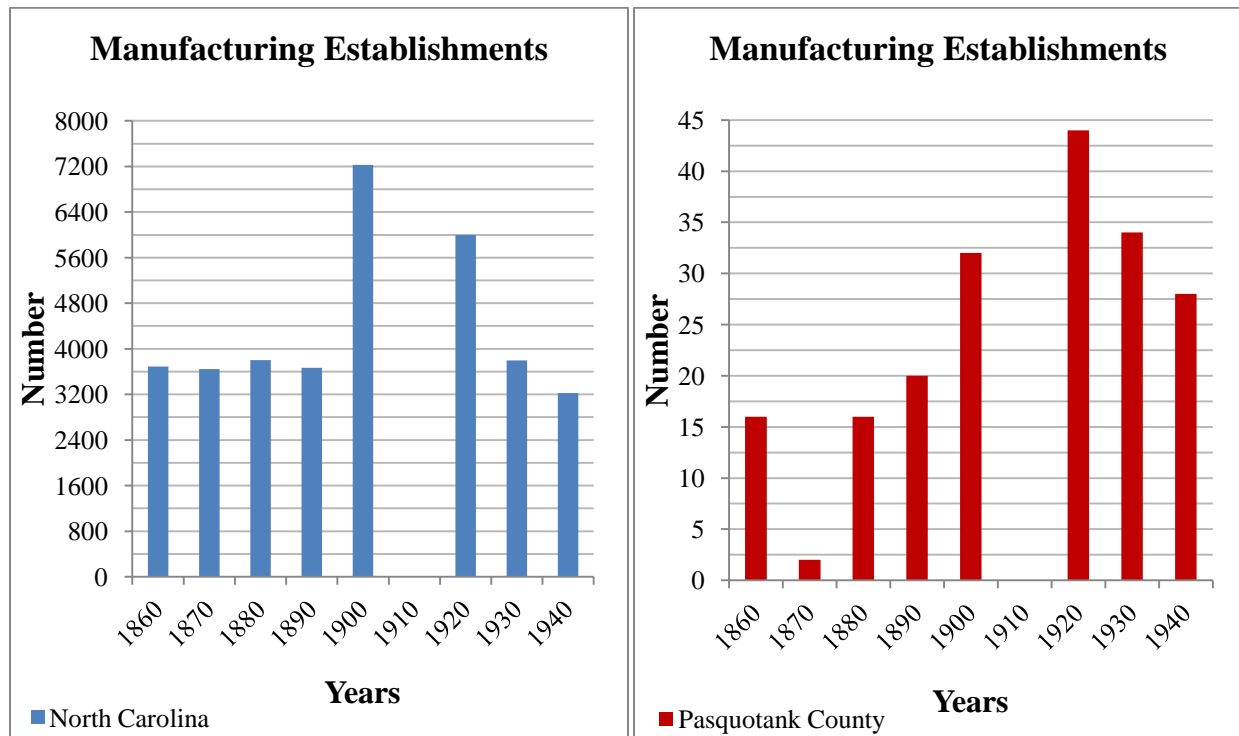


FIGURE 6.7. Manufacturing establishment data for North Carolina and Pasquotank County between 1850 and 1940 (University of Virginia, Geospatial and Statistical Data Center 2010).

The number of manufacturing establishments was not the only instance where Pasquotank County economic practices were in direct opposition to the general trend seen in North Carolina. While Pasquotank County was just beginning to heavily invest in manufacturing in 1880, North Carolina's capital investment in manufacturing had peaked and was heading into a rapid decline (Figure 6.8). This inverse relationship, Pasquotank County increasing its investment capital while the state's overall manufacturing investments decreased, continued through 1900.

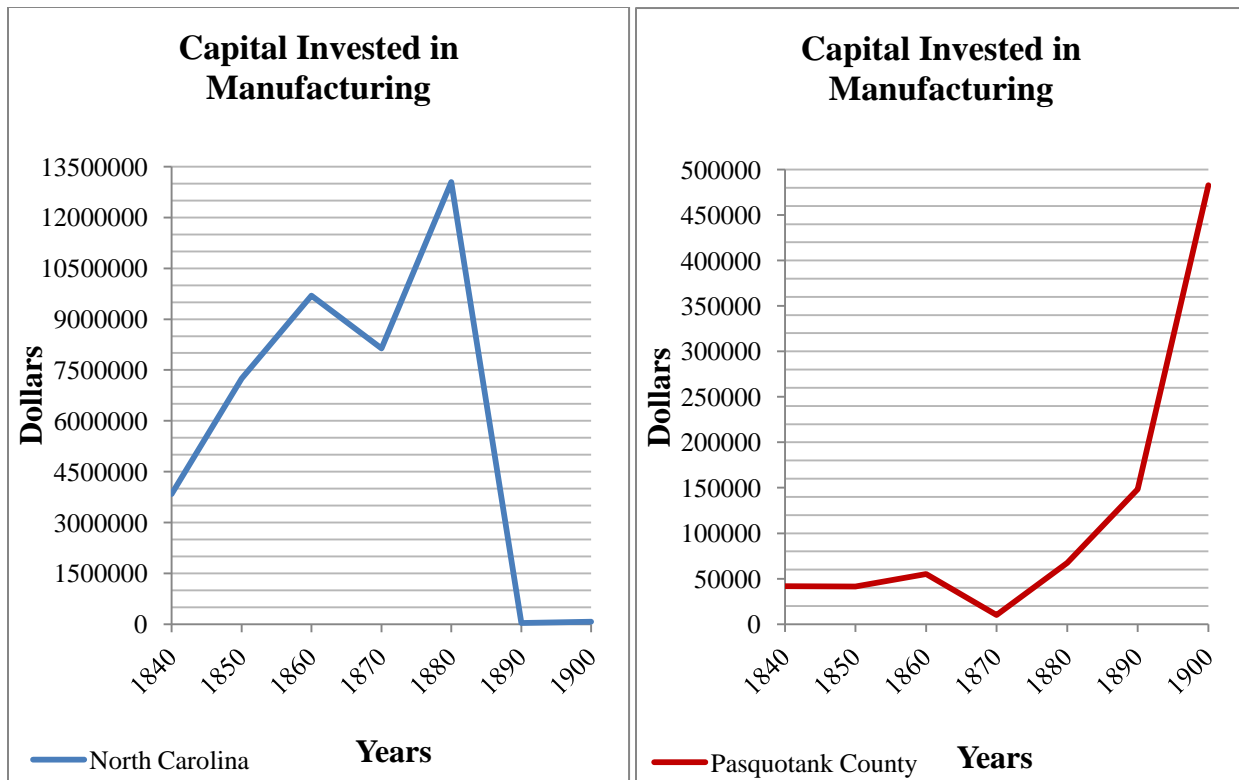


FIGURE 6.8. Investment Capital data for North Carolina and Pasquotank County between 1850 and 1940 (University of Virginia, Geospatial and Statistical Data Center 2010).

One of the explanations for the decrease in investment capital throughout North Carolina may be related to the overall value of manufactured commodities bottoming out in 1890 (Figure 6.9). The state experienced a severe decline in product value in the post-Civil War economy from 1870 to 1890. Reconstruction was slow to regain the economic prosperity seen in antebellum North Carolina. Pasquotank County experienced a vastly different economic environment following the end of the Civil War. Manufactured commodities' value, which had briefly suffered during the Civil War, rebounded at a surprising rate during Reconstruction (Figure 6.9). This was, no doubt, due to the combined effects of heavy investing in new manufacturing establishments and the newly established railroad route to northern markets. This increase in product value may also be related to the regained prominence of the DSC during the years of 1890 to 1910 (Figure 6.6).

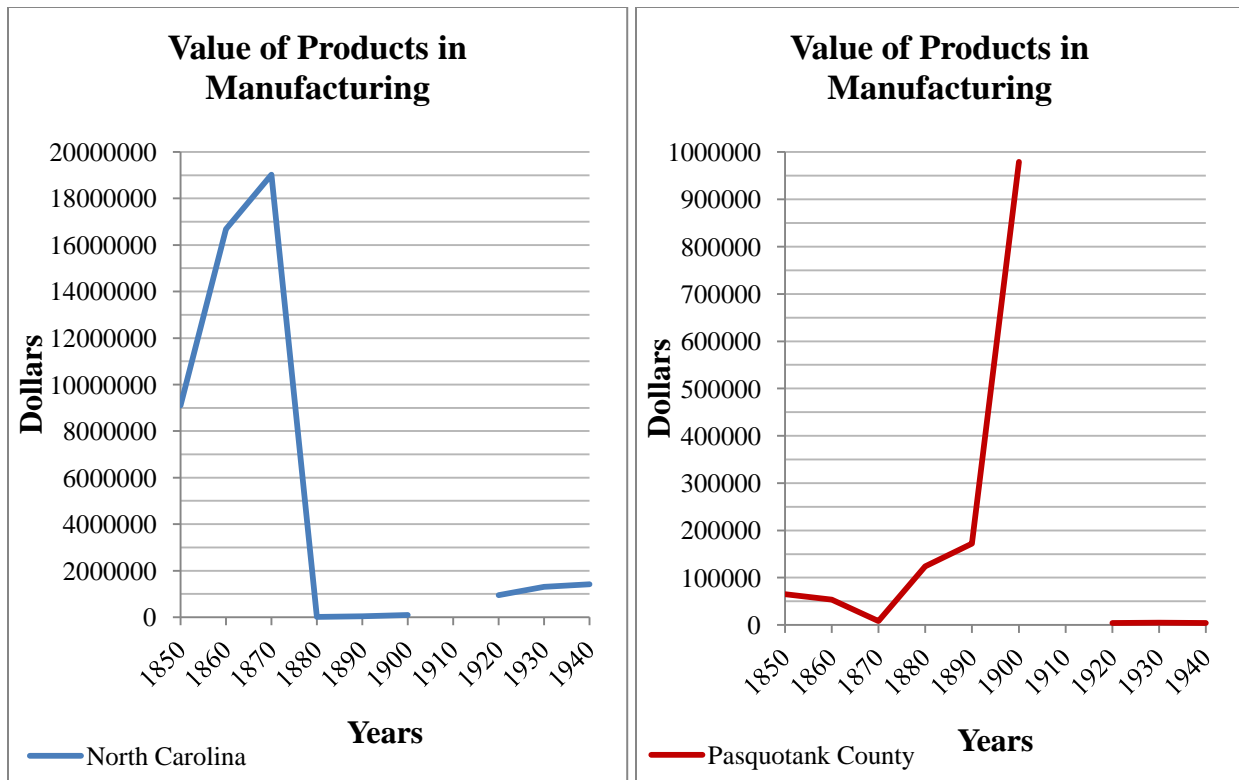


FIGURE 6.9. Product value data for North Carolina and Pasquotank County between 1850 and 1940 (University of Virginia, Geospatial and Statistical Data Center 2010).

The State Board of Agriculture's 1896 Annual Report (1896:195,197,210) enumerated specific industry growth around the turn of the century while local newspapers documented daily developments in Elizabeth City. Lumber was still, by far, the largest industry in Elizabeth City. Eighteen wood and lumber companies were incorporated between the years of 1890 and 1920 (State Board of Agriculture 1896:209-210). The four Kramer brothers remained the largest lumber company in town and by 1896 had opened a second sawmill that was both larger and more modern than the first. A third mill was opened between 1914 and 1923 on Knobb's Creek, and by 1931, the other Kramer mills had been torn down in favor of this mill's size and location. The Kramer company operated a successful business at the Knobb's Creek location for almost seven decades, but in 1961, L.R. Foreman and Sons bought the entire Kramer Lumber business (Butchko 2008:1.6.2).

Kramer Lumber Company's success in the closing years of the 19th century influenced the Blades brothers, originally from Maryland but with a recent mill in New Bern, North Carolina, to construct a finishing mill in Elizabeth City. The Blades Lumber Company sent rough cut lumber from their other locations throughout northeastern North Carolina to be finished into building supplies at the Elizabeth City site. Lemual S. Blades Sr. and James B. Blades, along with their brother-in-law Clay Foreman, and Frank G. Derrickson established the Elizabeth City Lumber Company in 1893 along Knobb's Creek. These two Blades operated companies were advantageously situated with easy access to the railway and canal shipping routes, both of which serviced the prosperous northern markets (Butchko 2008:1.5.2).

In 1906, the Blades-Forman Lumber Company merger combined the two largest lumber companies in Elizabeth City and became the most successful and long-lived lumber institution in the city (Butchko 2008:1.6.2). Additional lumber companies were scattered throughout Elizabeth City. William Staughn, Dare Lumber Company, and W.W. Griffin & Company were sizable lumber companies, and Thomas Commander operated a smaller company that specialized in sash, door, and blinds production. Pine, Cyprus, Gum, and Cedar trees from neighboring counties were shipped daily to the various lumberyards and floated in large lumber pens before being milled and redistributed (Simpson 2006:3). One company, Forman and Blades, was so successful late in the 19th century that they were later able to privately finance the construction of the biplane, *Kingfisher*, "in their homegrown Taft Airplane Corporation across the Pasquotank over on Machelhe Island" (Simpson 2006:6).

Elizabeth City's economy flourished during the 1910s and 1920s thanks, in large part, to the booming lumber industry, but change was in the air. Unregulated harvesting had severely depleted North Carolina's once dense northeastern forests during an unprecedented 50-year

expansion of the lumber industry. The North Carolina lumber industry, Elizabeth City included, peaked during the late 1920s. Following closely on its heels, the Great Depression of the 1930s hit Elizabeth City's economy and spared no industry. Stagnation rapidly turned to decline, and 15 lumber companies closed during the 1930s and early 1940s. The reduction of lumber companies can be seen in the overall decrease in manufacturing establishments in Figure 6.7. By 1942, there were only three lumber companies operating out of Elizabeth City, Foreman-Blades, Kramer, and Chesson (Butchko 2008:1.6.2). Closed factories resulted in large layoffs and remaining companies struggled with decreased operating budgets and reduced pay across the board, management included. Butchko (2008:1.6.2) discovered the banks invested in the Kramer Lumber Company so heavily that a default on Kramer's loans would affect the entire town's economy.

While lumber reigned supreme in Elizabeth City, there were in fact a number of other successful industries. Elizabeth City was the home to two cotton mills: the Elizabeth City Cotton Mill, established in 1895, and Cotton Seed Oil Company, which manufactured cotton byproduct such as cottonseed oil and meal. The two Roller Flour Mills were operated by White & Roper and William Parlin. W.E. Dunston supplied the town with ice, J.F. Saunders constructed buggies and carriages, and F.S. Brown made nets and twine for the growing fishing industry (*The News and Observer* 1899).

The Elizabeth City Cotton Mill and Elizabeth City Hosiery Mill employed 225 and 325 people respectively during normal operation. The 1930s depression resulted in these two mills shutting their doors multiple times during the decade. Most closures lasted only a few months when cotton demand was at its lowest, however, at its worst, the Elizabeth City Cotton Mill closed for the entire year of 1938. For years this caused severe economic hardship and financial

insecurity for hundreds of families that only ended when war production picked up in earnest in 1940 (Butchko 2008:1.6.2). The decreased number of manufacturing establishments in Elizabeth City in 1930 and 1940 were echoed throughout Pasquotank County and across the entire state of North Carolina (Figure 6.7).

Industrialization of the agricultural industry, including advances in the auto industry, was also a key factor during Elizabeth City's economic growth during the beginning of the 20th century. This can be measured in a variety of ways including the increase in the value of farm machinery as tractors and mechanized harvesting equipment was introduced, the overall increase in individual farm sizes, and the decrease in the numbers of employed personnel as machinery replaced human workers. Figure 6.10 demonstrates a significant increase in the value of farming machinery throughout Pasquotank County and North Carolina in first quarter of the 20th century compared to 19th century values. While the increase in equipment value is partially because there was an overall increase in the numbers of farms at the county and state level leading up to 1920 (Figure 6.11), the increase in farm numbers is not enough to justify the radical jump in machinery value.

Nineteen twenty represented the year when the number of farms in Pasquotank County peaked, after which the number of establishments began a steady decrease through 1970 (Figure 6.11). This decrease in the total number of farms was due to the fact that overall size per farm was increasing. By 1970, the number of farms over 100 acres in Pasquotank County had increased by 35% in 40 years (Figure 6.12). This increase also correlates with the increasing number of machines on each farm and their associated value, the trend that began in 1920.

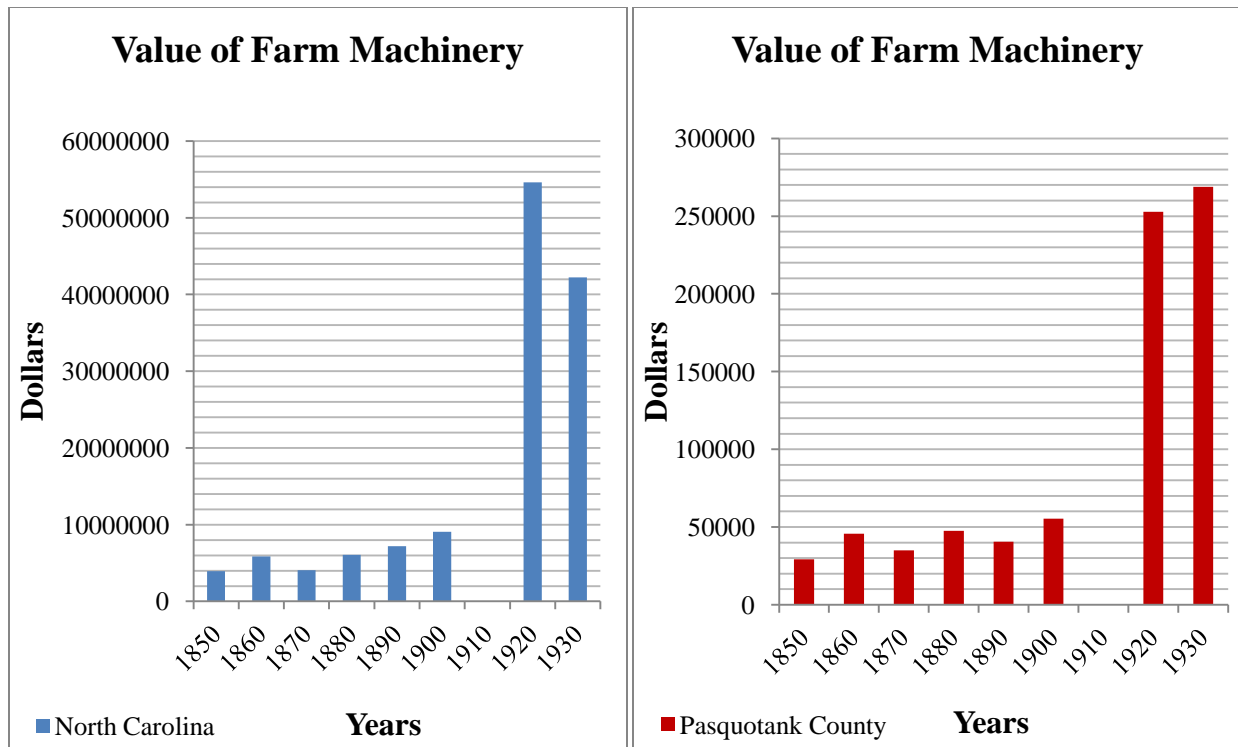


FIGURE 6.10. Industrialization of farming equipment increased the value of farm machinery during the beginning of the 20th century (University of Virginia, Geospatial and Statistical Data Center 2010).

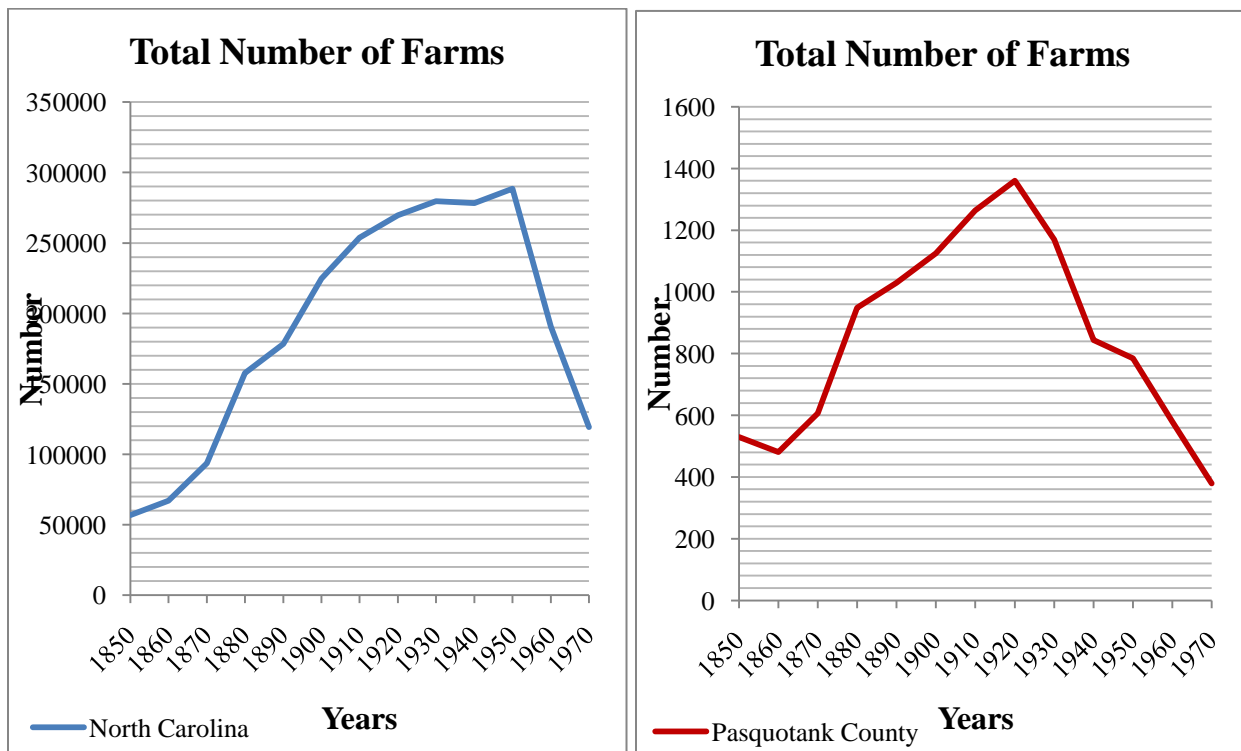


FIGURE 6.11. Total number of farms during the 19th and 20th centuries (University of Virginia, Geospatial and Statistical Data Center 2010).

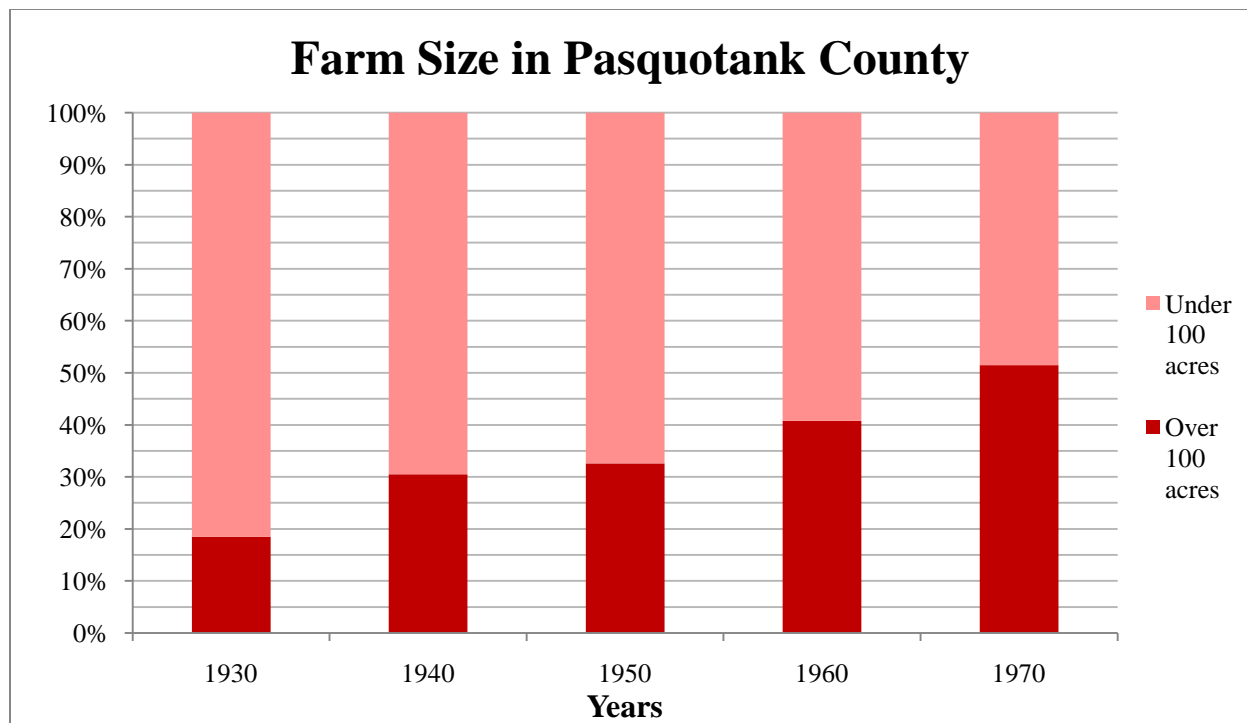


FIGURE 6.12. The number of farms over 100 acres increased from 1030 to 1070 while the overall number of farms decreased (Hamilton 1975:100).

One effect to the industrialization of farms was the decreased personnel needed to operate the agricultural industry. More efficient machines reduced the number of workers needed throughout the industry. Figure 6.13 represents the percentage of the civilian labor force employed in the agricultural industry in the middle of the 20th century. Between 1940 and 1970, there was a 51% reduction in the percentage of civilian workers employed in the agricultural industry across the United States. From 1940 to 1970, Pasquotank County's agricultural work force reduction was slightly less severe than the national average at 32%, while North Carolina's reduction was far larger, a 65% decrease in agricultural workers statewide between 1940 and 1970. It is important to note that forestry and fishing are included in these agricultural statistics. The loss of waterborne transportation and the loss of its associated jobs is directly reflected in this decrease of employed civilian personnel in the agricultural industry throughout the years of 1940 to 1960 (Figure 6.13).

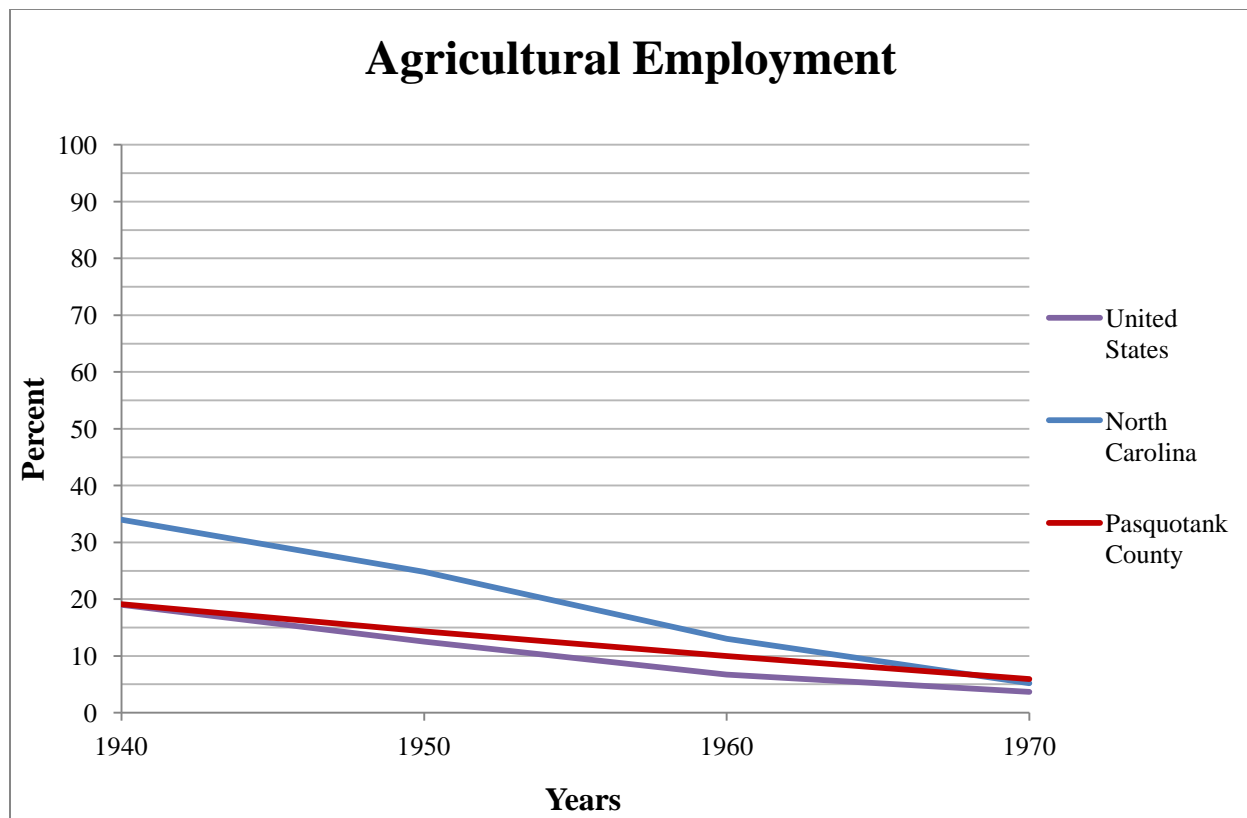


FIGURE 6.13. Percentage of civilian workers employed by the agricultural industry from 1940 to 1970 (Hamilton 1975:68).

In addition to the farms on the outskirts of town, Elizabeth City also housed a number of waterfront oyster houses for a short time. In 1891, Hemmeway's Oyster House initiated the Elizabeth City's oyster industry and over the following two decades, there would be up to five oyster houses operating at one time. Most interesting is the oyster packing plant located across from downtown Elizabeth City on Machelhe Island (Figure 6.14). This location coincides with the area where the bridge connecting Pasquotank and Camden Counties would later be built. By 1908, however, the industry had run its course in Elizabeth City and all the canning factories along the waterfront closed (Butchko 2008:1.5.2). Intense fishing in the Pamlico Sound and southern Albemarle Sound supported a brief expansion in the oyster harvesting industry but the resulting increased demand placed too great a strain on oyster beds and satellite packing plants such as Elizabeth City became superfluous.

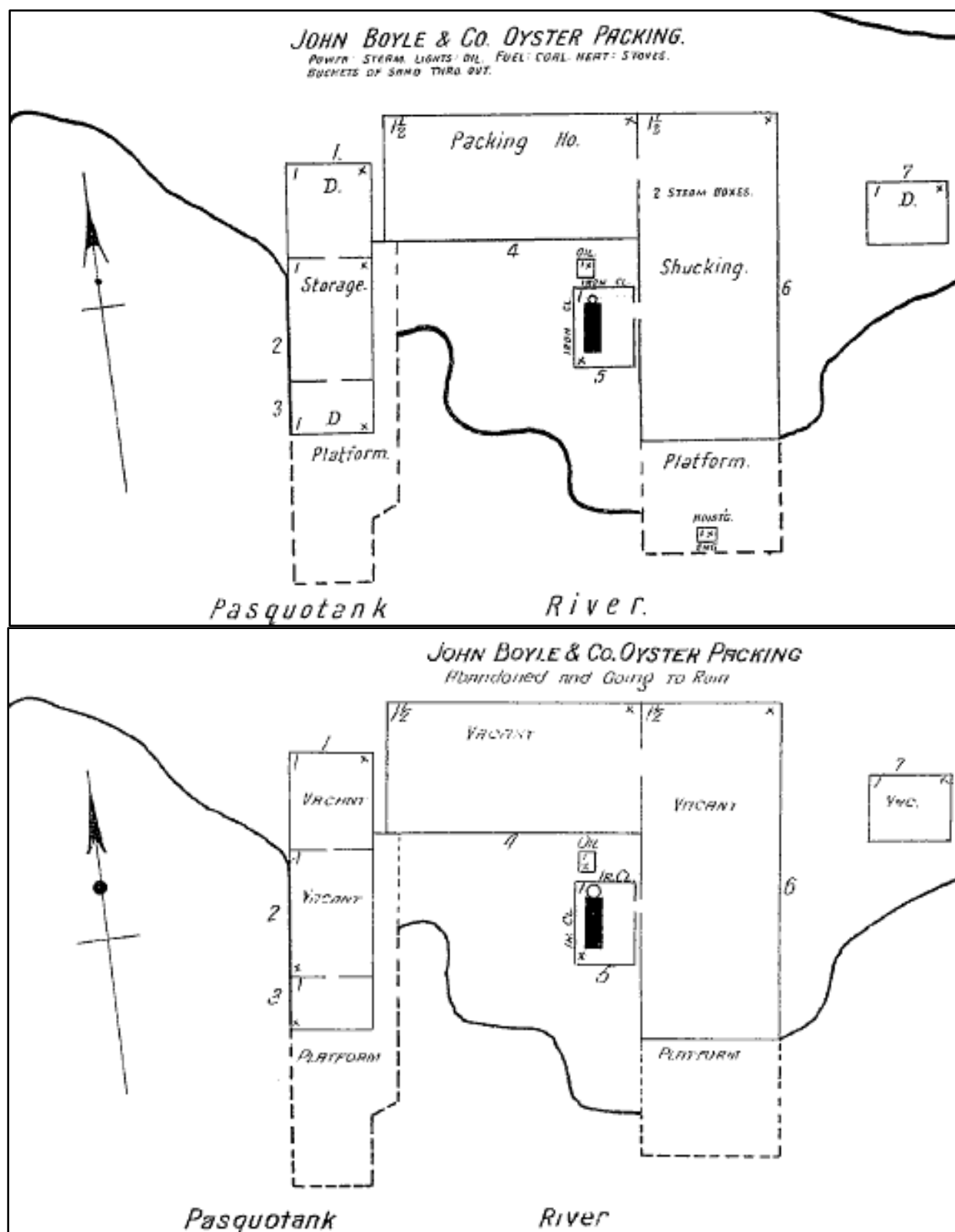


FIGURE 6.14. Oyster packing house on Machelhe Island immediately across the river from downtown Elizabeth City in business in 1902, top, and abandoned and going to ruin in 1908, bottom (SMCL 1902, 1908).

Commercial Development

In addition to the various industrial additions during the end of the 19th and beginning of the 20th centuries, Elizabeth City saw significant commercial development as well. National chain mercantile establishments, such as the arrival of F.W. Woolworth Company in 1909, joined the locally owned department stores and shops. The addition of a new passenger station for the Norfolk & Southern Railroad in 1910 increased the number of businesses surrounding West Main Street. The city limits expanded and as commercial development encroached on traditionally residential areas, Elizabeth City's suburbs began to form. Elizabeth City was able to support a wide range of commercial establishments primarily because of the population growth within the city and in surrounding towns.

The 1930s economic depression greatly affected the banking industry in Elizabeth City. Of the four banks in business in 1929, only one remained open throughout the 1930s, one immediately failed, and the other two reopened by 1935 following changes in ownership. Various lumber, cotton, and hosiery mill closings directly affected a large percentage of the population's ability to support the many commercial establishments as they once had and as a result, some businesses failed utterly, while others scraped by until the economy recovered (Butchko 2008:1.6.3). Elizabeth City residents saw an opportunity to revive the economy with the approaching war. The city sold war bonds in 1938 to purchase land south of Elizabeth City for the construction of the Coast Guard Air Station Base, and in 1940, a Naval Air Station was built nearby through a similar land purchase. The influx of military personnel and their families assisted Elizabeth City's economic recovery during WWII.

Civil Engineering Projects

Successful urban expansion needs organized municipal facilities such as electricity, sewage, water treatment, road maintenance, and communication, either telegraph or telephone services. The Elizabeth City Light, Power, and Water Company consolidated four of these necessary industries in 1908 from numerous smaller firms established during the late 1890s. Road maintenance projects to transform dirt to shell, shell to stone block or brick, and brick to pavement took place in various stages around 1900 (Butchko 2008:1.5.6). Elizabeth City's burgeoning commercial and industrial development, economic growth, geographical expansion, and technological advances would have been severely hampered without these necessary municipal facilities in place.

One of the key advancements affecting Elizabeth City during the 20th century has been the improvements in the roadways that connected it with the rest of North Carolina, the eastern seaboard, and beyond, to the rest of the country. The first bridge to span the Pasquotank River was a two lane wooden bridge built in 1905 connecting downtown Elizabeth City to Machelhe Island. This bridge was replaced in 1931 with the current drawbridge during the larger project of constructing the Camden Causeway. Completed in 1943-1944, the Camden Causeway extended U.S. route 158 through Elizabeth City to the eastern seaboard. The causeway travels the length of Machelhe Island connecting Elizabeth City to Currituck County, continues south parallel to Currituck Sound, and terminates in Nags Head, North Carolina (Pasquotank County Yearbook 1975: 94-99; Butchko 1989, 234-235). The road expansion seen within Pasquotank and Camden Counties is reflected in the funds appropriated for North Carolina's Highway Commission operational budgets (Figure 6.15). The increasing budget allowances represent the need to maintain the state's expanded road system following their creation in earlier decades.

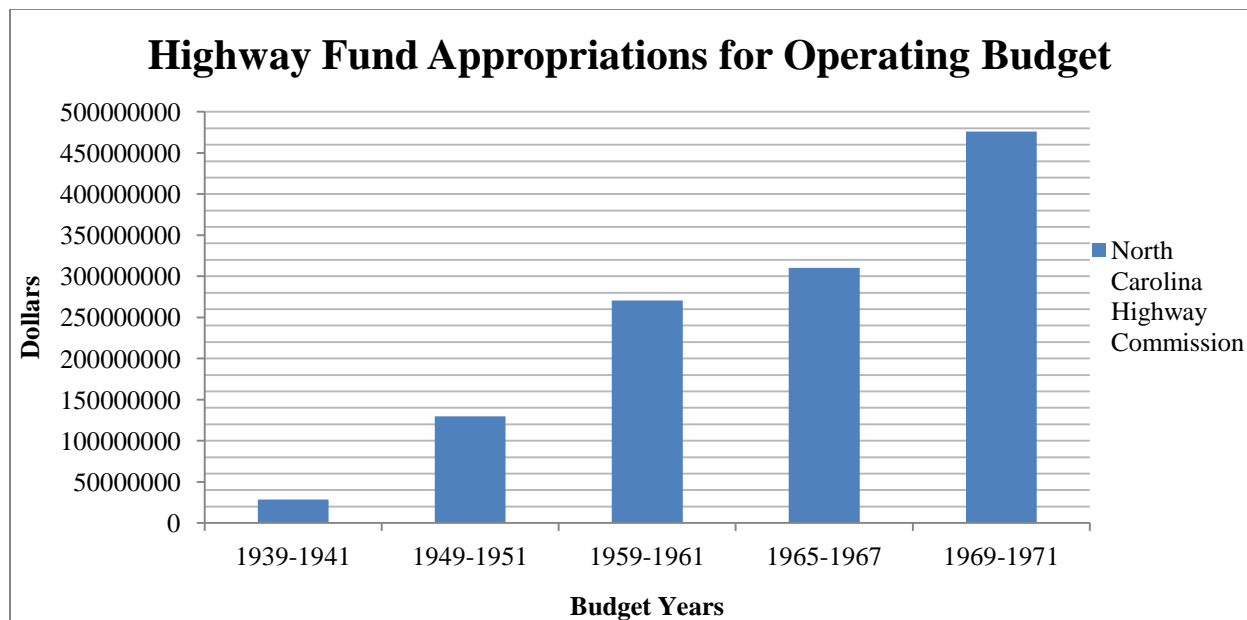


FIGURE 6.15. Increasing appropriations for the highway commission within North Carolina reflects the need to maintain the roadways created earlier in the century (Jones 1971:28).

Continuous improvements of the roadways throughout the Albemarle Region, and the growing popularity and affordability of personal automobiles throughout the 1930s, 1940s, and 1950s played a large part in the continuing shift away from the city's maritime reliance. As the canal was relied upon less and less for the town's economic survival, Elizabeth City's economic center migrated away from the waterfront. Shipping over land by trucks and tractor-trailers further reduced waterborne shipping towards the middle of the 20th century.

Population Growth

Elizabeth City's, and subsequently Pasquotank County's, population witnessed unrestrained growth during the end of the 19th and beginning of the 20th centuries. The decade following the Norfolk & Elizabeth City Railroad's arrival in 1881 increased Elizabeth City's population increased by 39%, from 2,315 to 3,251 people (Figure 6.16). From there, the city's population practically doubled to 6,348 by 1900. The steady commercial and industrial growth throughout the opening decades of the 20th century had spurred a rapid population growth in

Elizabeth City, a growth rate mirrored in Pasquotank County's total population increase from 1890 to 1910. Population growth in both the county and city were slightly hindered from 1910 to 1920 due to WWI, but both rebounded following WWI and resumed a steady population increase from 1920 through 1960. It was during this time that Elizabeth City was heralded as the largest city in northeastern North Carolina in both population and geography (State Board of Agriculture 1896:380; Cheney 1975:1129; Clay 1975:54; National Park Service 1977:3). This was due, in part, by the fact that Elizabeth City's commercial and industrial establishments supported not only its city residents but drew support from the surrounding towns and rural areas as well. Elizabeth City's growth rate reached a temporary plateau from 1960 to 1970 while Pasquotank County's growth continued unabated. This is likely because rural areas of Pasquotank County were developing independently rather than continuing to rely on Elizabeth City's economy. Most recently, both Pasquotank County's and Elizabeth City's populations have continued to increase over the last 20 years at a rate equal to that of the 1890 to 1910 boom (Figure 6.16).

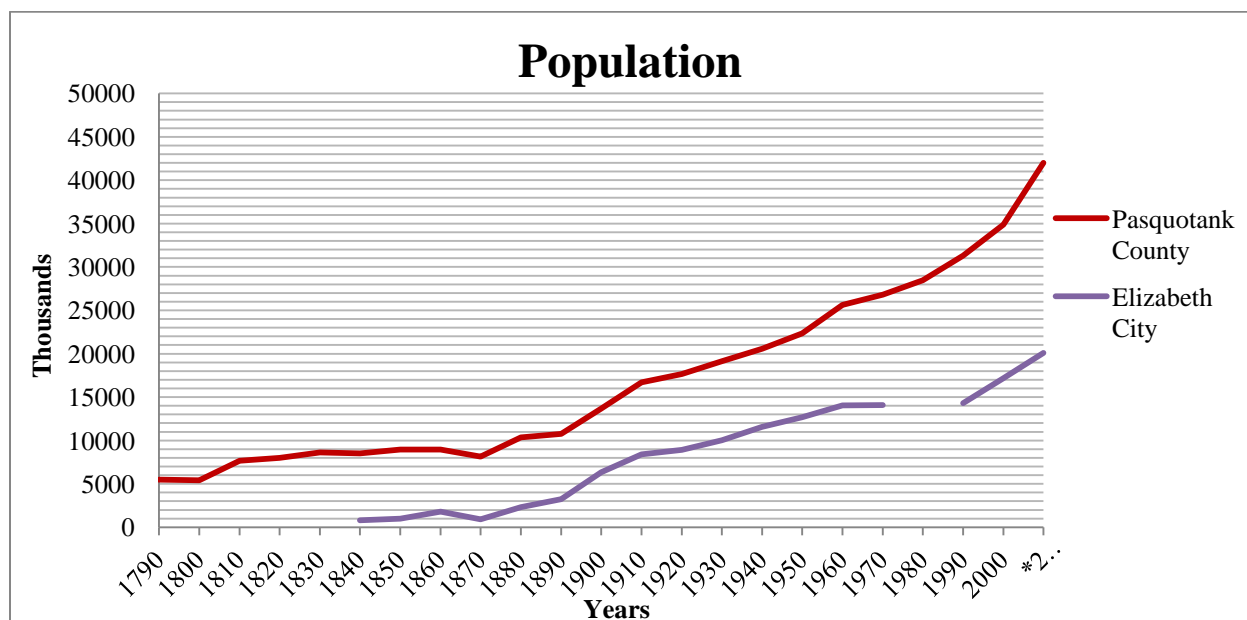


FIGURE 6.16. Population of Pasquotank County and Elizabeth City from 1790 through 2010 (U.S. Census). 2010 population statistics are estimated based on unofficial 2009 polls. 1980 population statistics for Elizabeth City were not located for this study, however, it is likely that the data falls within the range of 14,069 and 14,292.

Conclusion

Elizabeth City's economy had revolved around the maritime environment since its establishment in 1793, and even earlier than that, the budding towns of Redding, The Narrows, and Elizabethtown survived and thrived due to their advantageous location on the Pasquotank River. Ironically, one of the main events that spurred Elizabeth City's rapid growth and development during the end of the 19th and beginning of the 20th centuries was, in time, destroyed by the growth it initiated. Waterborne commercial transportation on the Dismal Swamp Canal was an essential aspect of Elizabeth City's economy for over one hundred years, but by the 1950s, local businesses had completely dismissed the maritime environment in favor of the newer land based transportation options.

The DSC's successful improvements in 1899, allowed local industries to conduct business on a larger scale, distribute their goods to a wider geographic area, and drew prosperous northern business south to Elizabeth City via the canal. Elizabeth City businesses that had established themselves on a regional or national scale were then able to adapt to the technological and transportation changes that shifted focus away from maritime transportation to railroad, and later, automobile distribution methods. Thus, it was the overwhelming success of the Dismal Swamp Canal, during the key years of 1899 to 1911, which contributed to the death of the commercial maritime industry in Elizabeth City.

The Norfolk & Southern Railroad played an equal if not more important role in shifting Elizabeth City's economy away from its traditional maritime focus. The railroad's arrival stimulated significant industrial growth, which in turn initiated commercial development, geographic expansion, and population growth. Once established, railroad commercial

distribution would become the main contributor to outmoding commercial maritime transportation, mainly via the DSC, and replacing it as the primary method of transporting goods.

Continuing transportation advancements in the automobile industry during the 1920s through the 1950s would change commercial transportation methods again. The increased affordability and availability of shipping goods via trucks and tractor-trailers assimilated a majority of the business railroads had previously taken from the maritime environment. Automobile popularity for personal transportation superseded steamship travel, further decreasing Elizabeth City's reliance on the maritime environment.

City residents perceived waterborne transportation, in both the personal and commercial arenas, as old-fashioned, antiquated, slow, and yesterday's technology. This is hardly surprising considering the technological advancements seen in such a short period of time. The Wright Brothers were flying in Kitty Hawk, North Carolina, iron steamers of enormous proportions were breaking the transatlantic voyages records weekly, and personal automobiles were all the rage. The inversely proportionate relationship between the increase in automobile sales and decrease in steamship travel supports the idea that public perceptions had drastically changed over a relatively short time.

In Chapter Seven, Act Three: The *L'histoire Événementielle*, the abandonment events that created the Elizabeth City Ships' Graveyard will be identified and placed into context. These *l'histoire événementielle* represent specific examples of people's interaction with the maritime environment that reflect the ongoing changes seen in this *conjoncture* of Elizabeth City's history. The chapter's goal is to demonstrate how the abandoned vessels reflect the economic change, technological advancements, and shifting perceptions of the maritime environment during Elizabeth City's main *conjoncture* and the *longue durée*.

CHAPTER SEVEN: ACT THREE: THE *L'HISTOIRE ÉVÉNEMENTIELLE*

Introduction

The micro level of history, *l'histoire événementielle*, looks at a single individual or specific event. Fernand Braudel gave the least amount of attention to these single events, most likely because they represented the traditional historical focus from which the Annales School was trying to break away. Le Roy Ladurie, Braudel's former student, argued that *l'histoire événementielle* should be viewed as critically significant events that break established patterns, an assertion that is directly compatible with abandonment studies (Knapp 1992:6). Researching single events has its purpose when that event is related to the larger context and is imbued with a new significance. In a similar vein, Brooks et al. (2008) emphasize "the large lessons discovered in small worlds" when examining microhistoric events. This chapter presents the analysis of the cultural behaviors, such as economic shifts, technological advancements, and changes in societal perceptions that are reflected in the individual vessel abandonments. These individual events are then related to the larger context of Elizabeth City's main *conjoncture* and the *longue durée*.

The individual abandonment *événementielle* that formed the Elizabeth City Ships' Graveyard are many and varied, and took place over numerous decades. Every vessel within the graveyard was abandoned within a specific set of circumstances, some of which have been discussed in Chapter Four and many of which we know nothing about. Correlating the historic record and archaeological remains provided an avenue to assess how the abandonments in the ships' graveyard represent the historic culture, economy, and technology of Elizabeth City. Based on this amalgamation of historical and archaeological data and statistical analysis, a deposition range was created for each of the 101 vessels in the complex (Figure 7.1). In some cases, a vessel's deposition was pinpointed to a specific year while others span multiple decades.

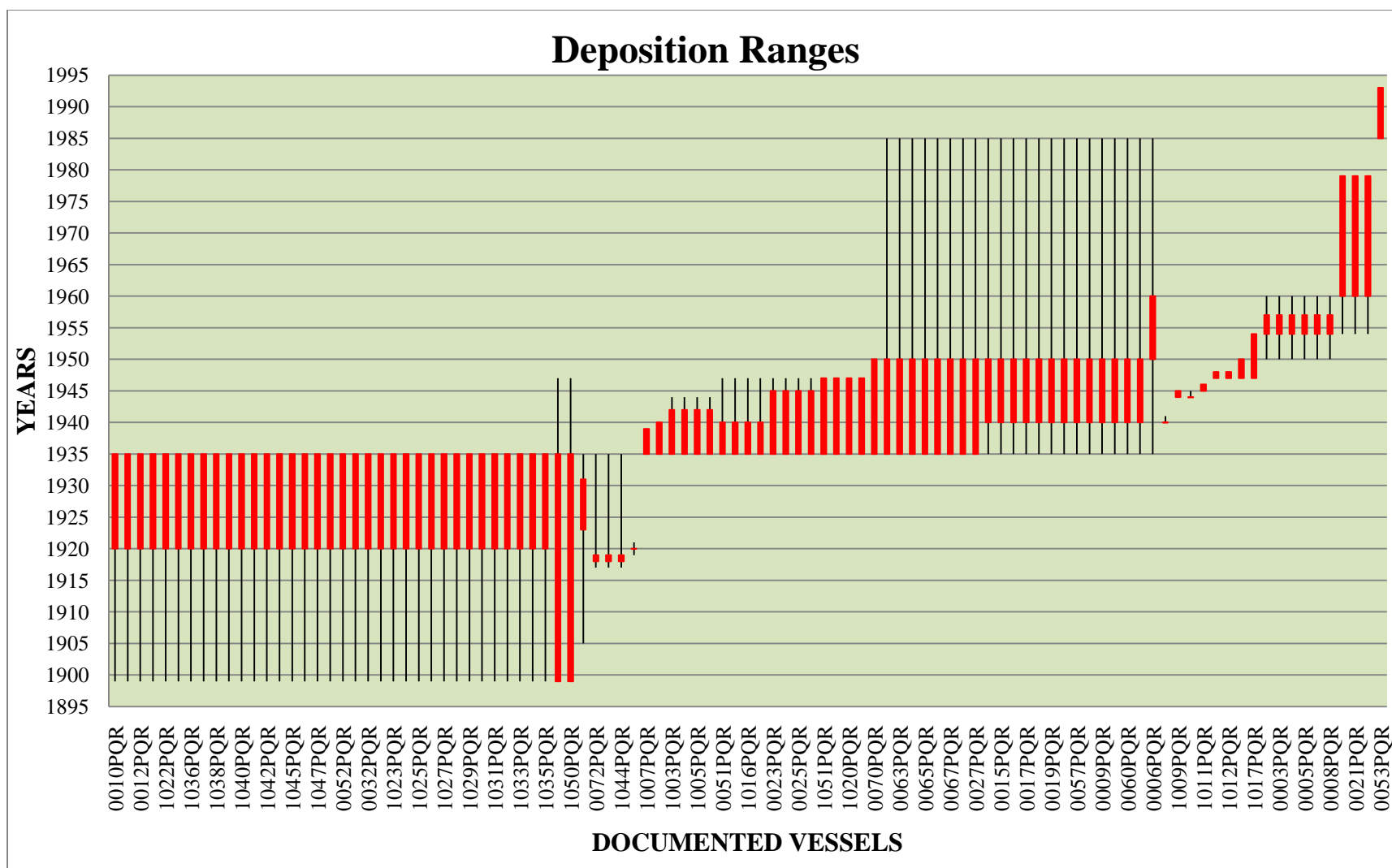


FIGURE 7.1. Deposition ranges for all 101 vessels in the Elizabeth City Ships' Graveyard (Chart by author 2010). Correlated archaeological and historic vessels are included under their official identification numbers. Thicker bars represent the most probable abandonment dates within each deposition range determined by analysis of cultural conditions such as economy, technology, and cultural perception of the maritime environment. The five temporal phases are represented here, arranged from earliest to most recent based on the earliest date at which the vessels could have been abandoned. Space along the horizontal axis only allows 51 site numbers to appear however all 101 vessels are represented in the chart.

Deposition ranges were determined by compiling the verifiable information for each vessel, such as photographs, maps, and archaeological data, thus the disparity in the different range sizes. In addition to deposition ranges for each vessel, Figure 7.1 highlights the most likely abandonment dates within those large ranges. These abandonment dates are slightly more subjective than the deposition ranges as they were determined by analysis of less tangible data such as cultural changes in economy, technology, and social perception.

Once the 101 individual deposition ranges were determined, the graveyard was analyzed to establish its chronological development. As determined in Chapter Four, a number of historic and archaeological vessels correlated to one another, narrowing the dataset from 101 to 84 different ships within the graveyard. Graphing the individual vessels' abandonment ranges generated five temporal depositional phases: *Pre-1935*, *1935-1950*, *1950-1960*, *1960-1980*, and *1985-1993*. The vessels within each phase reflect different cultural behaviors based on the time period in which they were abandoned. Understanding the behaviors reflected in the discarded vessels will allow the ships' graveyard to be placed into the larger context of Elizabeth City's history, the 1881-1950 *conjoncture* and Elizabeth City's maritime interaction over the *longue durée*. Each of the five depositional phases were mapped to provide a means of viewing the temporality and spatial relationships. The depositional phase maps were created utilizing the earliest possible deposition date for each vessel.

Phase One: Pre-1935

The earliest documented phase of the abandonment complex occurred before 1935. Of the 84 vessels in the graveyard, 30 were abandoned during Phase One. The earliest possible deposition date was determined to be 1899. As discussed throughout Chapter Four, vessels tend to be abandoned near their primary function area. If this supposition is accurate, the vessels

abandoned near Elizabeth City most likely worked in the Pasquotank River and utilized the Dismal Swamp Canal. Based on the size of the archaeologically documented ships and estimated vessel sizes from the historical record, the earliest these vessels could have functioned in the waterway was 1899 when the DSC reopened with expanded locks and a consistent channel depth.

The vessels abandoned during Phase One were clustered in six locations (Figure 7.2). The south shore of the Pasquotank River has nine vessels along the historic shipyard waterfront and represents the largest concentration of vessels in this phase. Machelhe Island's north shore near Glover's Cut has the second largest cluster, seven vessels, and its west shore has the third largest concentration at six vessels. Reed Island, the northern most cluster, is comprised of five vessels, the Texaco Dock has two vessels, and Thompson's Dock has one vessel.

The division of vessel types in Phase One breaks down to 10 wooden barges, 1 concrete barge, 17 wooden ships, and 2 ferrous ships. This represents the most diverse deposition phase by hull material. Deposition locations were influenced by proximity to active areas of the river and water depth. With the exception of vessels 1027PQR and 1049PQR, the vessels of were abandoned in shallow areas of the river outside the navigational channel. Thompson's Wreck and the Glover's Cut and Reed Island clusters are situated farther away from the active waterfront area in little-used areas of the riverbank, however, the other three clusters are located in active areas of the river.

From 1890 to 1920, local businesses exploited the reopened DSC for its economic potential. Shipping products north in barges was an efficient and affordable transportation method, and importantly, was the method accepted by northern markets. This use of the local



waterway is evident in the radical increase in tons shipped via the DSC following its reopening (Figure 6.6). As railway delivery became the accepted and expected method of transportation, barges and the DSC were utilized with decreasing frequency resulting in the diminished importance of the DSC and the abandonment of unnecessary barges. Such was likely the case for the 10 wooden barges littered throughout the river that were abandoned during Phase One. Railroad expansion throughout the end of the 19th century, as evidenced by the increased in miles of track laid (Figure 6.1), reflects North Carolina's desire to increase the number of areas connected by rail lines. This early phase of the graveyard foreshadows the eventual replacement of waterborne shipping by the railroad as evident in the significant increases of railroad freight revenue throughout North Carolina during the second half of the 20th century (Figure 6.3).

Vessels 0031PQR and 0032PQR, located near the Texaco Docks, represent a change in early 20th century maritime technology. Vessels 0031PQR and 0032PQR were auxiliary wooden schooners that likely operated as early oil tankers for the Texas Oil Company. Technological advancements in hull design and construction, specifically the increased popularity of iron-hulled oil tankers, could possibly have rendered vessels 0031PQR and 0032PQR obsolete and directly influenced their abandonment. The deposition of vessels 0031PQR/1008PQR, 0032PQR/1038PQR, and 1037PQR at the Texaco docks some time prior to 1935 suggests that the docks also ceased operation during that time as the three vessels would have created an operational hazard. The technologically advanced oil tankers would not have been able to maneuver in the Pasquotank River at Elizabeth City. This loss of waterborne business for the Texaco docks, combined with the increased need of a land-based gas station to combat the increase in personal automobiles (Figure 6.5), most likely led to the closing of the dock station

and the abandonment of the three vessels 0031PQR/1008PQR, 0032PQR/1038PQR, and 1037PQR.

Vessel 0072PQR/1044PQR/1052PQR, the Concrete Barge, reflects a different aspect of maritime technological change. Abandoned unfinished in 1918 when WWI ended, this hulk reflects a national and regional attempt to advance the maritime industry and supplement the U.S.'s naval fleet. Liberty Shipbuilding of Wilmington, North Carolina, was also involved in the attempt to make concrete ships a viable form of construction. It was one of the first shipyards on the east coast to construct and launch a concrete ship, USS *Cape Fear* in 1919, unfortunately for Liberty Shipbuilding the war was already over by the time the ship launched and the project was scrapped soon thereafter (Bender 2003:1). Concrete ships were deemed inefficient and the project was discontinued, however, Concrete Barge (0072PQR/1044PQR/1052PQR) remains as a testament to the strength of experimental construction.

On the southwest shore of the Pasquotank River, a group of nine abandonments litter the bank of the old E. S. Willey shipyard premises. In 1914, T. B. Hayman and E. S. Willey shipyards merged to create the Elizabeth City Iron Works and Supply Company. When the shipyards consolidated and moved to a nearby location, the newly vacant waterfront docks became the site of a small complex of abandoned ships. These ships may have been older vessels that the new company deemed unnecessary or people completely unrelated to the shipyards may have deposited them. Lemuel S. Blades III (2009, pers. comm.) an Elizabeth City resident throughout his life, recalls the decrepit condition of this vessel cluster throughout his youth in the 1930s and 1940s suggesting that the vessels had been rotting in place for some years before that. These vessels, therefore, represent both the flourishing economy of 1900s and 1910s in Elizabeth

City and the subsequent economic downturn that began in 1929 and lasted through 1939 when the economy began to recover with the beginning of WWII.

Elizabeth City's economic prosperity during 1900 to 1910 is reflected in the number of manufacturing establishments throughout Pasquotank County (Figure 6.7) as well as the overall increase in capital invested in manufacturing industries during that time (Figure 6.8). This trend of economic prosperity in Pasquotank County, and therefore Elizabeth City, is in direct opposition to the economic health of the state of North Carolina based on the severe reduction in investment capital for the manufacturing industry beginning in 1880. This disparity demonstrates that an element present in Pasquotank County allowed it to heavily invest in its economy while the rest of the state was tightening investment budgets. Pasquotank County's geographical location, positioned on the eastern seaboard with access to northern markets via the newly constructed railways and the revitalized Dismal Swamp Canal, provided the key element that allowed the county, especially Elizabeth City, to prosper while the remainder of the state did not. This example of Elizabeth City's advantageous geographic location maintains a trend that began with the area's first settlements and continues to be beneficial to Elizabeth City through the present.

Elizabeth City's commercial utilization of the maritime environment began to decrease with the popularization of rail transportation during the 1920s and 1930s. This shift to rail transportation would continue throughout Phase Two and completely overtake waterborne commercial transportation in Phase Three as the statewide railroad freight revenue infers (Figure 6.3). Social perception also influenced personal maritime transportation in the decrease of steamboat lines in favor of automobiles in the 1930s, however, no vessels have yet been found to support this change with archaeological evidence. The lack of the railroad pier in Elizabeth

City's harbor acts as a form of negative evidence in that the removal of the structure in 1931 reflected the decreased steamboat service to and from Elizabeth City.

Phase One created a precedent of abandoning ships in Elizabeth City that signaled to others within the community that abandonment behavior was acceptable. This coincides with Schiffer's (1996:62) position that people tend to dump trash where others have previously deposited refuse creating a concentration, which in turn, further perpetuates the behavior. There are parallels between human behavior with trash and their behavior with intentionally abandoned ships. In both cases, once someone initiates a behavior, others are then able to justify their own actions based on the previous example. It is impossible to state definitively what Elizabeth City residents' perception of the first abandoned ship was, however, from the number of abandonments in the ships' graveyard, it is apparent that at some point the behavior became an acceptable form of discard for old or unwanted vessels.

The deposition areas established in Phase One are also significant. Richards (2008:84) heavily stresses that an abandoned vessel should never pose a navigational hazard or be in a position to cause destruction to other vessels. The vessel cluster abandoned directly across the river from Elizabeth City's active waterfront represent the greatest potential for navigational hazards because the river narrows to its smallest breadth at that point. Review of the active navigational channel on the 1935 Army Corps map reveals that all the historic abandonments in that location were removed a sufficient distance from the main channel thereby posing no threat to active boaters. A similar situation was observed in Wilmington, North Carolina, at the Eagle's Island Ships' Graveyard (Seeb 2007). Despite their relative proximity to the active maritime industry and operational waterfronts, both Eagles Island and Elizabeth City abandonments were relegated to the fringe of their respective waterways and therefore avoided being removed as

navigational hazards. This pattern of abandoning vessels on the fringe of the waterway is repeated throughout all five temporal deposition phases of the Elizabeth City Ships' Graveyard.

Phase Two: 1935-1950

Phase Two is composed of 28 wooden barges and 16 ships (Figure 7.3). The vessels abandoned during this phase represent a variety of deposition circumstances and a number of cultural behaviors. Constant throughout Phase Two is the influence of technological advancements, mainly the railroad and iron steamships, that had established themselves in previous decades and continued to threaten the longevity of traditional waterborne transportation methods. Phase Two also represents the largest depositional phase for the Elizabeth City Ships' Graveyard, 44 vessels.

Clarence A. Holland (1009PQR) and *Thomas J. Shryock* (1001PQR) represent the end of the Chesapeake Bay Rams, a small class of three-masted centerboard schooners that operated from the 1900s to the 1940s. Originally designed for the canals of Delaware and the Carolinas, these flat-bottomed schooners primarily carried lumber throughout the mid-Atlantic coast.

Thomas J. Shryock wrecked in 1940, was subsequently towed to Elizabeth City and abandoned.

Clarence A. Holland sailed into the harbor in the spring of 1944 but was then left to rot (Burgess 1963:114; Blades 2009, pers. comm.). Both of these Chesapeake Rams were abandoned because they were antiquated technology, superfluous vessels in a world of steamships and railroads.

Wooden ships require continual maintenance, and evidence suggests that the expense of involved in repairing a wooden vessel sometimes leads to the decision to abandon it (Richards 2002:82).

During Phase Two the lumber industry was declining from over-harvesting and iron-hulled steamships could provide the same function without the maintenance requirements of wooden



FIGURE 7.3. Phase Two:1935-1950 (Map by author 2010). White polygons represent vessels abandoned in the current phase and black polygons represent vessels abandoned in previous phases.

vessels like *Clarence A. Holland* and *Thomas J. Shryock*. These two abandonments reflect an industry in decline, technological advancements in railroad transportation, and innovations in iron ship construction.

Vessel 0054PQR was abandoned during Phase Two as well. If this ship was an wooden ocean going sailing ship, as the side scan image suggests, its introduction into the abandonment complex was likely because, like *Clarence A. Holland* and *Thomas J. Shryock*, advancing technology rendered it obsolete or the required maintenance was too expensive. Vessel 0054PQR was deposited south of Reed Island (Figure 7.3). Reed Island is located at the mouth of Knobb's Creek, the historic location of a number of lumber mills, directly north of the railroad station at the north end of Elizabeth City's waterfront (SMCL 1908, 1923, 1931). Working under the assumption previously discussed, that vessels are often abandoned near their primary use area, vessel 0054PQR further represents local businesses' transition from waterborne to railway shipping. As the lumber industries moved towards railroad shipping, a foregone conclusion based on the railroad freight revenues from the lumber industry (Figure 6.3), the lumber transportation vessels were rendered obsolete. Overall decreases in waterborne shipping prevented reuse of these lumber vessels in a different function, and in the case of 0054PQR, its wooden construction and expensive maintenance likely precluded its transition into a recreational vessel.

Texaco 144 (1011PQR), *O.T. & Lloyd Jr.* (1010PQR), and *Lucile Ross* (1012PQR) were three other vessels abandoned on the northwestern shore of Machelhe Island. The three ships participated in three different industries, oil transportation, commercial fishing, and ship towing, respectively, but all reflect the decline in Elizabeth City's maritime interaction and an economic shift away from maritime related industries. *Texaco 144* was an early wooden oil

tanker that was replaced by more modern iron-hulled oil tankers, *O.T. & Lloyd Jr.* worked as a commercial fishing vessel for the Globe Fish Company and was abandoned when the local fishing industry suffered from an economic downturn, and the tugboat *Lucile Ross* was abandoned when the need for maritime tows in the area decreased with the popularization of railroad transportation. Richards (2002:213) maintains that rapid changes in technology or economic circumstances leads to increased watercraft discard. Phase Two can claim both significant economic changes and numerous technological advancements that have influenced the number and rate of vessel discard at Elizabeth City. Elizabeth City's waterborne commerce had traditionally been focused on harvesting-related industries such as agriculture, forestry, and the associated finished products such as milled lumber. Increased investment in manufacturing industries and the resulting increase in the number of manufacturing establishments (Figures 6.7 and 6.8) was a blow for waterborne commerce because the new economic sector utilized railroads to transport their manufactured goods to the most profitable markets (Figure 6.3).

The cluster containing four oyster barges and a lumber barge on the southern shore of Machelhe Island was created during the construction of the Camden Causeway during the 1930s and 1940s. The lumber barge abandonment reflects the lagging lumber industry and shift from waterborne to railway commercial transportation. Elizabeth City's oyster industry collapsed in the first decade of the 19th century, 25 years before these oyster barges were abandoned (SMPC 1902, 1908). This suggests that they were intentionally brought to Elizabeth City when the oyster industry was suffering from over-fishing throughout the first half of the 20th century. This group of vessels was removed from the river before the official clean-up program in the late 1950s. The short abandonment range and removal from the river suggests that these vessels were cached or stored in this location temporarily and that they re-entered the systemic context in either an

original or secondary function, though it is not known whether the reclaimed barges were used in their primary function or if they were reused for a secondary purpose. This is the only instance of temporary intentional abandonment observed in the Elizabeth City Ships' Graveyard, but it provides the opportunity to observe the reclamation process of reintroducing artifacts from the archaeological context back into a systemic context.

In an early attempt to revitalize the waterfront, Mayor Levin B. Culpepper obtained a federal grant between 1957 and 1959 that funded the removal of a number of the Elizabeth City abandoned hulks (Lemuel S. Blades III 2009, pers. comm.). The wreck removal project reflects a change in social perception; as recreational boating increased with the popularization of personal watercraft it was no longer acceptable to use the river as a dumping ground for old vessels, at least not within sight of the downtown waterfront.

An additional social aspect to consider is the spatial patterning of Phase Two abandonments. Some of these vessels were deposited in locations further away from downtown Elizabeth City than Phase One which featured abandonment clusters close to the city. This stems from a number of factors. Like much of the state, Pasquotank County was maintaining and expanding the road system throughout the area (Figure 6.15). The Camden Causeway was under construction during the 1930s and 1940s and following its completion, people began the commercial and residential development of Machelhe Island. Three marinas and a number of private homes were built along the new causeway over the subsequent decades and would have deterred abandonments in the newly active waterfront areas. This means that vessels like 0010PQR-0011PQR and 0014PQR, the barges in direct spatial relation to active marinas, were in place before the marinas were built.

Vessels such as 0018PQR-0019PQR and 0062PQR were likely discarded at the site of the vacant Dare Lumber Company facility some time during the late-1930s or 1940s before it was renovated for the Elizabeth City Sewage and Water Treatment Plant. The cluster of vessels northeast of Reed Island was created by adding to the small cluster of three abandonments established in that area prior to 1935. All of these locations are visually and geographically removed from downtown Elizabeth City, and were not active waterfront property at the times these various vessels were deposited. This behavior reaffirms Richards' (2008:56) statements regarding vessel abandonment in areas away from active primary use and Schiffer's (1996:62) observations about concentrations of abandoned items.

The temporal analysis of Phase One and Two has revealed additional spatial relationships and discard behaviors that were not visible when analyzing individual vessels or the complex as a whole. Vessels deposited in Phase Two utilized the hulks abandoned during Phase One for placement assurance. This interesting behavior would not have been detected were it not for the temporal analysis. Vessels 1010PQR, 1011PQR, 1012PQR, and 1017PQR were deposited between hulks abandoned during Phase One and the shore ensuring that they would stay in place.

Richards (2002:381) stated that the Great Depression was the single most critical event influencing Australian vessel abandonments, citing peak impact on discard during the years of 1929 to 1939. Phase One correlates with the first half of the depression and Phase Two of the Elizabeth City graveyard coincides with the latter half of the critical decade Richards identified. The first two phases of the abandonment complex represent 90% of the vessels in the graveyard thereby agreeing with Richards' claim. Manufacturing data from Pasquotank County supports the assertion that the Great Depression was a critical factor in the development of the Elizabeth City Ships' Graveyard. The debasement of manufactured goods and subsequent rate of business

failures (Figures 6.7 and 6.9) in turn affected the shipping industry and directly influenced the creation of the abandonment complex. This is in opposition to the economic state of Wilmington, North Carolina during the Great Depression where Seeb (2007:168) states that the local maritime environment prospered during this period and did not affect the creation of the Eagles Island Ships' Graveyard significantly.

Phase Three: 1950-1960

Six vessels were abandoned during depositional Phase Three, vessels 0002PQR-0005PQR, 0007PQR, and 0008PQR (Figure 7.4). These are the largest vessels in the ships' graveyard and are abandoned in an area of the river near Elizabeth City large enough to accommodate the barges without the vessels encroaching upon the active navigational channel. This phase initiates the decline of the abandonment complex and represents the complete outmoding of the Dismal Swamp Canal as Elizabeth City's premiere connection to northern markets.

The vessels in Phase Three reflect not only the advances in railroad and automobile transportation systems as well as the shifting social perceptions and economic changes that accompany them, but they also reflect contemporary problems with the maritime environment itself. As Jeb Stuart (2009, elec. comm.) stated, by the late-1940s, local companies were under pressure to transition from waterborne commercial transportation to railroad transportation despite the negative financial incentive to do so. Mr. Stuart's statement suggests a change in cultural perception of maritime transportation at the end of the 1940s. Northern markets favored railroad over waterborne transportation and companies, such as Stuart's grandfather's, had to comply to continue competing in the changing market. This pressure was also due to the public perception of a company's ability to adapt to rapidly changing technology. Societal perception

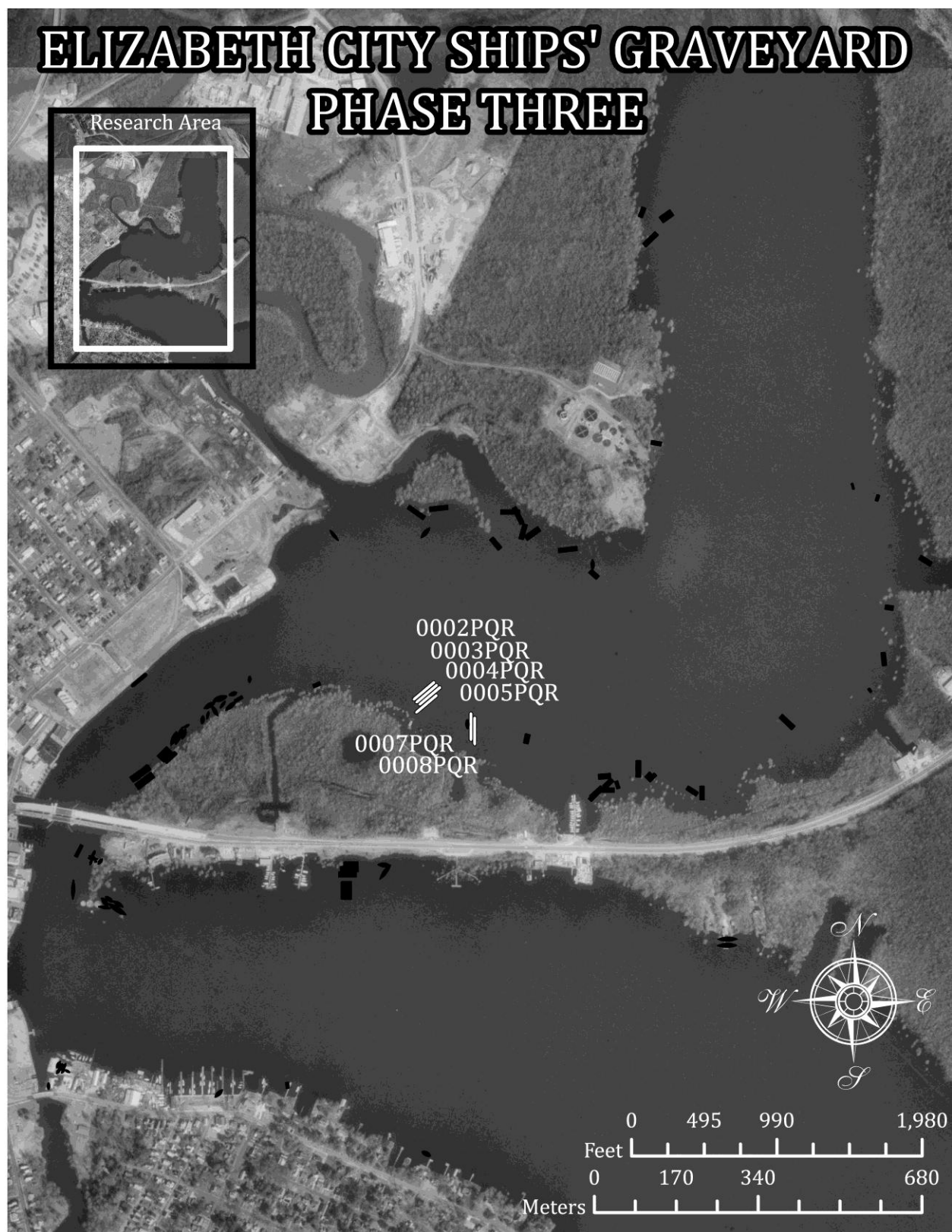


FIGURE 7.4. Phase Three: 1950-1960 (Map by author 2010). White polygons represent the vessels abandoned in this phase while black polygons represent vessels abandoned in previous phases of the graveyard.

avored the technologically advanced railway shipping over waterborne methods because they were considered archaic and outdated.

Companies faced with external pressures to abandon the traditional method of waterborne commercial shipping were further thwarted by environmental problems. The DSC experienced trouble with droughts in 1952-1953, 1954, 1955, 1957, 1962, 1963, and 1968. The culmination of external pressures based on public perception, increased commercial railroad shipping, and environmental factors led to the abandonment of the six bay barges in Phase Three. Outmoding the waterborne method of commercial transportation as well as abandoning the vessels that provided that service directly relates to the number of people associated with that industry being unemployed. This is directly reflected in the decreased percentage of civilians employed in the agricultural industry, including forestry industries, in both Pasquotank County and across the state of North Carolina from 1940 through 1970 (Figure 6.13).

Phase Four: 1960-1980

Phase Four consists of two vessels, 0021PQR and 0022PQR/0030PQR, located on the south shore of Machelhe Island (Figure 7.5). Vessel 0021PQR is a pleasure fishing vessel built in the 1950s, and 0022PQR/0030PQR is a deadrise work boat with a screw propeller. Both vessel types were popular during the 1950s and 1960s and were likely deposited between 1960 and 1979. Based on cultural analysis, especially Elizabeth City residents' interest in the beautification of the waterfront during the late 1950s, it is likely that vessel deposition occurred no earlier than 1960. There is, however, a small possibility that they were abandoned as early as 1954 when the nearby marina went out of business thereby ceasing waterfront activity at that location and making the area susceptible to abandonment activities.



FIGURE 7.5. Phase Four: 1960-1980 (Map by author 2010). White polygons represent vessels abandoned in the current phase and black polygons represent vessels abandoned in previous phases.

Phase Four represents the maritime environment adapting to a new function. Vessels 0021PQR and 0022PQR/0030PQR represent the end of Elizabeth City's mid-century shift to recreationally focused maritime interaction. Elizabeth City's annual Moth Boat Regatta reached international recognition during the 1940s and 1950s cementing the city's shift in perception of the maritime environment (Museum of the Albemarle 2010). Elizabeth City's post WWII economy had long completed the shift from maritime reliance to railroad focused. Elizabeth City's shift to railroad commercial transshipment is echoed in the years directly following this phase. North Carolina's overall railroad freight revenue from 1960-1969 demonstrates steady increases among forestry, agricultural, and manufacturing industries (Figure 6.3).

Phase Four also represents the beginning of the end for the Elizabeth City Ships' Graveyard. The decline in active abandonment behaviors from 1954 to 1979 was a trend seen in the Eagles Island Ships' graveyard as well. Seeb (2007:161) observed a decrease in abandonment behaviors beginning in the 1950s and ceasing entirely by 1963. While abandonment behaviors at Elizabeth City continue slightly longer than Eagles Island, all the vessels abandoned after 1960 were recreational personal watercraft rather than commercial vessels.

Ronald Reagan's creation of the Environmental Protection Agency (EPA) in 1970 and subsequent environmental acts likely exhibited a strong influence on the cessation of abandonment behavior at Elizabeth City. Amendments to the Federal Water Pollution Control Act in 1972 were specifically aimed at reducing the pollutants and navigational hazards in rivers and harbors (USEPA 2007:1). These guidelines were the first major legislation addressing potentially polluting wrecks and/or navigational hazards since the incorporation of the Wreck Act into the 1899 Rivers and Harbors Act, 33 USCS § 409 *et seq.* (Boring and Zelo 2006:3). While the vessels abandoned in the Elizabeth City Ships' Graveyard do not represent

navigational hazards and have minimal potential to cause serious river pollution, the focused interest on inland waterways and the updated laws with their accompanying hefty fines was incentive enough to dissuade the majority of Elizabeth City inhabitants from continuing the abandonment behaviors seen prior to 1970.

Phase Five: 1985-1993

The final phase of the Elizabeth City Ships' Graveyard is comprised of a single vessel located off the northeastern shore of Machelhe Island (Figure 7.7). This appears to be the most recent addition to the ships' graveyard. Given its recent abandonment and its quickly deteriorating condition it seems likely that the vessel was discarded due to age, disrepair, or poor construction rather than an overlying economic, social, or technological trend. Vessel 0053PQR represents the cessation of abandonment activity in Elizabeth City. By the late-1980s and early-1990s Elizabeth City's relationship with the maritime environment was strictly recreationally focused, its commercial ties with the waterway dissolved decades earlier in the century. A lack of salvage or scavenging behaviors indicate there was no economic impetus to recover material from 0053PQR. This sign of economic prosperity is corroborated by Elizabeth City's sharp population increase during the last quarter of the 20th century (Figure 6.16).

The gap between 1980 and 1985 represents a period when no vessels were added to the abandonment complex at Elizabeth City. Economically, the waterway's commercial function had ceased to play an important role in Elizabeth City almost 30 years prior. Culturally, city residents regarded the river as a recreational resource that was valued for its aesthetic qualities, especially near the downtown waterfront area. The absence of abandonment behavior can also be explained by the relatively prosperous economy of the late 20th century, increased legislation governing the



FIGURE 7.7. Phase Five:1985-1993 contains the most recent deposition (Map by author 2010). White polygons represent vessels abandoned in the current phase and black polygons represent vessels abandoned in previous phases.

proper disposal of watercraft by the EPA and federal government, and the beginning of an environmentally conscious public.

Phase Five, the single addition to the complex since the 1980-1985 gap, occurred north of Machelhe Island where there is no residential structures and is tucked behind four large bay barges essentially shielding vessel 0053PQR from public view. This behavior could be considered furtive in comparison to previous deposition behaviors seen in the graveyard. The abandonment location was specifically chosen to hide the activity from public view in an area of the river removed from the picturesque downtown waterfront. This suggests that contemporary cultural views of abandonment behaviors, once openly allowed, had shifted to be unacceptable. This is a direct reflection of the societal views towards the environment during the latter quarter of the 20th century that were initiated, in part, by the EPA's call for an environmentally aware society.

Conclusion

Each abandoned vessel has specific circumstances leading to its discard and while the author can hypothesize about individual circumstances, there is no way of knowing every contributing factor or the accuracy of the hypotheses. It is possible however, to determine large scale factors such as economic growth and recession, technological advancements, environmental conditions, and changes in social perception of the maritime environment because they are reflected in the abandonments themselves. In this way, it is possible to provide evidence that affirms that the abandonment complex is a microcosm of Elizabeth City's economic, cultural, and technological changes throughout the 20th century.

The Elizabeth City Ships' Graveyard was created during five abandonment periods: *Pre-1935*, *1935-1950*, *1950-1960*, *1960-1980*, and *1985-1993*. The earliest phase, *Pre-1935*, initiated

the ships' graveyard with the earliest abandonment after 1899 and set a precedent for abandonment behaviors in and around Elizabeth City's waters. Vessels abandoned during the Phase Two, 1935-1950, reflect many aspects of Elizabeth City's changing culture following the first decades of the 19th century, especially the long term economic, social, and technological impact of transportation advancements. Phase Three, 1950-1960, reflects the completion of railroad dominance over waterborne transportation and its accompanying economic implications. Additionally, Phase Three addresses the culture's changed perception of the maritime environment from a life-sustaining function to pleasure and recreational use. Phase Four, 1960-1980 illustrates the rapid technological advancements in modern personal watercraft as well as the continuing social perception of the river as a source of pleasure and recreation. The final phase, 1985-1993, reflects Elizabeth City's prosperous economy and the complete transformation away from reliance on the local maritime environment, as well as a new environmentally aware society.

Every societal perception, technological change, and economic shift reflected in these abandoned vessels relates the ships' graveyard to a larger context than just the individual abandonment. The cultural, economic, and technological changes observed in the Elizabeth City Ships' Graveyard have reflect the prevailing circumstances during the 1881-1950 *conjoncture* that precipitated its formation and through that, relates the ships' graveyard to the *longue durée* of human interaction with the maritime environment. Trends in the archaeological record echo national and worldwide events such as WWI, the Great Depression, and WWII extending the significance of the Elizabeth City abandonments beyond localized importance. Additionally, every culture studied over the city's *longue durée* that has utilized the geographic area in question had depended on the waterway as a significant aspect of their survival, be it for

sustenance, defense, economic gain, communication, or transportation. Elizabeth City's shift away from reliance on the maritime environment as a life-sustaining resource during the mid-20th century represents the first such departure in the history of the area's settlement.

What this assemblage of vessels does not reveal is as telling as what it does. While there is no shortage of wooden constructed ships and barges, there is a dearth of ferrous ships in the abandonment complex, especially mechanized commercial vessels. The transition to mechanized ships, using either steam, oil, or diesel, were an important phase of shipbuilding and domestic trade throughout the U.S. and is patently absent from the Elizabeth City Ships' Graveyard. Additionally, while there is a small amount of negative evidence reflecting the loss of steamship prominence, passenger steamboats are not a part of the Elizabeth City abandonment collection. The ships' graveyard reflects major changes in Elizabeth City's development but the nuances are absent from the collection. Small-scale shifts in the economy and technological advances during the main *conjunction* were not observed in the graveyard. Finally, as previously noted, the amount of lateral-cycling observed in the abandonment complex is middling to none, however, that does not mean it did not occur, we are just unable to perceive it through the archaeological record. This translates to changes on a small scale or of a temporary nature. Short economic downturns likely resulted in temporary abandonments, but are not observed in the archaeological context because the vessels re-entered the systemic context after a brief time. Similarly, it is likely that there were failed maritime technological innovations at some point in time, but they were removed or replaced once their ineffectiveness was determined which explains why they are not observed in the complex today. The Concrete Barge (0072PQR/1044PQR/1052PQR) is a related example. Were it not for the difficulty of disposing of a large concrete and rebar-constructed barge, there would be no physical reminder of that failed experimental ship

construction. In short, this analysis has determined that the Elizabeth City Ships' Graveyard is a microcosm of Elizabeth City's 20th century development. While the collection of abandoned ships reflects the city's different economic, cultural, and technological changes, it is not a looking glass that reflects an identical facsimile of Elizabeth City during its development.

CHAPTER EIGHT: THE FINALE: THE CONCLUSION

Analyzing Elizabeth City's history on each level of Fernand Braudel's three-tiered model of temporal rhythms, *longue durée*, *conjoncture*, and *l'histoire événementielle*, has provide the most complete picture of Elizabeth City's maritime history to date. The *longue durée* illuminated the geographic characteristics that identified Elizabeth City's settlement potential. Analyzing the Albemarle's geography revealed the underlying motives for the region's settlement throughout pre-history and into the present. Within the framework of the macrohistory, the main *conjoncture* from 1881 to 1950 represented the critical phase of Elizabeth City's development. It was during this period that Elizabeth City reaches its peak involvement in waterborne commerce throughout the mid-Atlantic before rapidly shifting away from the maritime environment as a life-sustaining resource. The 1881-1950 *conjoncture* established the framework that allowed *l'histoire événementielle*, or abandonment events, to take place. Applying Braudel's three levels of history to the Elizabeth City Ships' Graveyard has provided the means to relate the abandonment complex, a microcosm of technological advancement, economic change, and cultural perception, to the larger context of human interaction with the maritime environment and Elizabeth City's established maritime history.

The abandoned vessels that populate the ships' graveyard in the Pasquotank River provide a valuable resource for studying Elizabeth City history. The abandonment complex is a microcosm of the city's development and reflects alterations in societal perceptions, technological advancements, and changes in the economy. Correlating the historic research and archaeological data provided a means to analyze and understand those cultural behaviors and isolate the circumstances that led to the human decisions that created the ships' graveyard.

The research and analysis for this thesis was grounded in a theoretical framework that incorporated ideas from history, anthropology, archaeology, and behavioral psychology. Chapter Two outlined the theoretical basis for this research and created a foundation in which the correlated archaeological and historical data in Chapters Four through Seven were analyzed. Understanding the site formation processes observed in the archaeological record, including identifying the behaviors that created the processes, was a primary goal of this research. Studying the site formation processes, behaviors, and the motivation behind them expanded this research beyond just a particularistic study. Additional theoretical analysis utilized Annales scholar Fernand Braudel's three-tiered hierarchy of temporal rhythms: the *longue durée*, *conjoncture*, and *l'histoire événementielle*. Evaluating the ships' graveyard on three levels of history allowed the author to relate the individual abandonment events to human interaction with the maritime environment throughout Elizabeth City's known history. This created a more complete history by establishing a relationship between a single set of events and the larger historical context.

The research methodology, thoroughly described in Chapter Three, consisted of in depth historical research, archaeological fieldwork, and the correlation of the historical and archaeological data for analysis. Chapter Four provided the results of the archaeological fieldwork in the form of 84 individual site reports. Elizabeth City's history was present in three acts; Chapter Five: Act One: The *Longue Durée*, Chapter Six: Act Two: The Main *Conjoncture*, and Chapter Seven: Act Three: The *L'histoire Événementielle*. The *long durée* and *conjoncture* focused primarily on historic research while *l'histoire événementielle* incorporated the correlated historical and archaeological data into its analysis. Site formation processes and behavioral

analysis were interspersed throughout Chapters Four and Seven as they related to individual abandonments or the graveyard as a whole.

Observations

Correlating the historic and archaeological data for the Elizabeth City Ships' Graveyard provided the resources to demonstrate that the abandonment complex represents a microcosm of economic, social and technological development in Elizabeth City. Identifying each vessel's life-cycle in Chapter Four produced a complete analysis guided by the behavior-oriented theoretical framework laid out in Chapter Two. Evaluating these life-cycles generated information about the human behaviors and decision-making that created the graveyard.

Identifying and evaluating the vessels' use and deposition revealed information about the human decisions that resulted in individual abandonments as well as the creation of the collective graveyard. Richards (2002:287) emphasized the importance of analyzing use and modification behaviors because they directly relate to the discard process and "influence the time and nature of the transformation from the systemic context to the archaeological context." This statement was supported by repeated observations of vessel use and modification that gave insight into the decision making process driving the abandonments at Elizabeth City. Minimal reuse was observed in the Elizabeth City Ships' Graveyard. This does not mean that it did not occur. For a majority of the vessels in the abandonment complex, their construction did not limit their function to a single industry or purpose but instead allowed for variability in the function and service it provided without noticeable modification to the hulls. Lateral-cycling and secondary use was probably very prevalent in the complex's vessels because it is a cost effective way of running a business through modifying a vessel physically or changing a vessel's function to suit current needs, it just is not visible in this archaeological record.

The Elizabeth City Ships' Graveyard developed over 80 years and under a wide range of circumstances. Evaluating the abandonment range for each vessel mirrored Elizabeth City's development at that time and reflected economic, social, and technological changes through the observed abandonment behaviors. Analysis of the complex's temporal depositional processes revealed five temporal phases of vessel discard. Table 8.1 synthesizes each phase of the ships' graveyard, the number of vessels deposited during the phase, and the formative elements reflected through the archaeological record. Each phase of the graveyard reflected specific elements of the culture that created it, but also reflected ongoing trends in technological changes, economic practices, and cultural perceptions of the maritime environment.

Spatial analysis of the complex revealed patterns in the relationships between the types of abandonment and their location in the graveyard. Vessels associated with industries within Elizabeth City were often discarded across the river from the downtown waterfront area where commercial and industrial operations were centrally located. Urban expansion pushed larger industries such as lumber mills and cotton factories to the fringes of the city and the vessels associated with these industries are abandoned a corresponding distance from the city. This spatial pattern suggests the ongoing desire for the associated industries to have access to the abandoned vessels if necessary.

Post-depositional processes analysis provided additional insight into the creation of the ships' graveyard and human abandonment behaviors. The reduction processes of salvage, scavenging, and conservation were observed in the archaeological remains as well as the historical record associated with the Elizabeth City Ships' Graveyard. Reclamation processes, though minimal in the complex, identified behaviors that reintroduced material from the archaeological context back into the systemic context. Conservation processes reflecting the

PHASE	NUMBER OF VESSELS	THEMES
One Pre-1935	30	<ul style="list-style-type: none"> - Initial shift from waterborne to railroad commercial shipping - Initial transition of DSC's function from commercial to recreational - Industry-specific utilization of the maritime environment - Maritime technological advancements in domestic commercial oil trade - Experimental ship construction during WWI - Roadway expansion and increased availability of personal automobiles - Economic prosperity from 1900 through the 1920s - Economic recession from 1929 to 1935 (Great Depression)
Two 1935-1950	44	<ul style="list-style-type: none"> - Economic recession from 1935 to 1945 (Great Depression ended by entrance into WWII) - Economic boom following the end of WWII in 1945 - Technological advancements in iron ship construction - Increasing economic dependence on railways for commercial transshipment - Continuing decline in utilization of steamship passenger service - Increasing utilization of automobiles for personal transportation - Initial shift of societal perceptions of the maritime environment from a commercial function to a recreational function
Three 1950-1960	6	<ul style="list-style-type: none"> - Completion of the shift from waterborne commercial shipping to railway use - Continuing shift in cultural perceptions of the waterway's function to recreational use and increasing aesthetic value - Continuing difficulties with reoccurring droughts cause sporadic DSC closures - Personal automobiles are mainstream and dominate personal transportation - Initiates the decline of active abandonment activities
Four 1960-1980	2	<ul style="list-style-type: none"> - Completion of the shift in the waterway's function from commercial to recreational - Continuing trend of depositing outdated technology in the graveyard - EPA enacts laws regarding pollution and navigational hazards - Maritime technological advances in personal watercraft such as resin and fiberglass construction, outboard motors, and personal yachts - Completion of the waterfront beautification project shapes abandonment behaviors in relation to location and number - Further reduction in abandonment activities
Five 1985-1993	1	<ul style="list-style-type: none"> - New environmentally aware society curbs abandonment behaviors - Culture places high value of river aesthetics over function - Economic prosperity of the late-20th century - New abandonment behavior type seen in the complex, behavior is furtive or secretive and influenced by cultural beliefs - Cessation of abandonment activities

Table 8.1. Five temporal deposition phases and the cultural themes reflected therein (Table by author 2010).

desire to retain material for posterity was documented in only one case in the abandonment complex. The nature of these abandoned vessels, for the most part, does not lend itself to conservation processes because they rarely have anything of conservation value on board. This is further supported by the city's lack of maritime artifacts that usually decorate coastal towns that rely on the maritime environment; an additional example the maritime environment has decreased importance for Elizabeth City.

Evidence of placement assurance is seen throughout the ships' graveyard at Elizabeth City. The immediate result of placement assurance is to ensure a ship does not move from its deposition area, however, the motivation behind this behavior is one of economic prudence. If the vessel stays in place, it is easily accessed for post-depositional salvage and there is no possibility of the abandoned vessel causing damage to viable structures of vessels that may operate in the associated area.

Refuse characteristics of this abandonment complex are varied. The Elizabeth City Ships' Graveyard exhibits both primary and secondary refuse sites as well as at least one caching site. This differs greatly from the abandonment complex in Wilmington, North Carolina, which Seeb (2007:214) argues is a purely a primary refuse site, and differs from the Wright's Creek abandonment site that, like most other complexes, is predominantly secondary refuse (Marcotte 2009, pers. comm.).

Limitations and Further Research

There were a number of limitations to this research. The most glaring limitation is the nature of abandoned work vessels and the inability to identify a majority of them with any certainty. Positive identifications would have allowed the creation of a more complete life-cycle than was possible for these abandonments. It is the belief of this author that access to local

maritime related business records would provide a substantial amount of identification information for the vessels in the Pasquotank River. Of the 84 vessels known to have populated the graveyard, only 3 have accurate verified abandonment dates to within a year while the majority have deposition ranges that span a decade or more. Environmental conditions were a second limitation. The water visibility and depth obscured construction features and possible abandonment signatures that would have better identified these vessels. The decision to not use SCUBA during the fieldwork for this thesis was a self-imposed limiting factor that was based on time and budgetary constraints, however, that excluded a number of vessels from being investigated.

Ships' graveyard and abandonment studies are underutilized in the archaeological field. This study has built upon the research of a handful of other abandonment studies and contributes a new approach to studying ships' graveyards and, as mentioned by many abandonment scholars, should be used as a springboard for additional research in this and related fields. Within the graveyard at Elizabeth City, there are a number of questions left unanswered. There is scarce information about barge construction, a vessel type that is amply represented in the ships' graveyard and could be investigated to the fullest if other abandonment complexes were included in the study. Environmental formation processes were also not explored by this thesis, representing an additional research topic that could further clarify the overall graveyard site formation processes. Finally, this thesis addressed the abandonments directly associated with Elizabeth City, however there are numerous additional wrecks and abandonments in the Pasquotank River that have not been studied. Expanding this topic to include the entire river system would add considerable information to the field. An alternate topic would compare the abandonments associated with the canals along the mid-Atlantic seaboard including the

Delaware Canal and the Albemarle & Chesapeake Canal, or expand the topic to include canal abandonments throughout the eastern seaboard trade network.

Conclusion

This thesis has demonstrated that the Elizabeth City Ships' Graveyard is a microcosm of economic development, cultural change, and technological advancement of Elizabeth City. It has also demonstrated that the Annales School scholar Fernand Braudel's model of temporal rhythms can be successfully applied to a ships' graveyard study. Individual abandonments can be systematically studied and analyzed within an historical and behavioral archaeology theoretical framework that related the individual abandonments to the larger context of Elizabeth City's known historic and long term human interaction with the maritime environment surrounding the city. The prevailing circumstances that motivated the human behaviors that created the complex were assessed through the correlation of the historical and archaeological research. This thesis has also demonstrated that the information gained from studying ship abandonments can contribute to the established history of Elizabeth City's trade on the local, coastal, and domestic levels. Further, the application of an Annales informed approach to the Elizabeth City Ships' Graveyard provided a deeper understanding of the microcosm than would have been achieved through a purely behavioral/psychological approach. An Annales-based theoretical analysis also developed stronger ties between the sites and the processes that affected their deposition and post-depositional transforms. The ships' graveyard scattered throughout the Pasquotank River at "the narrows" represents Elizabeth City's history as a center of maritime commerce and is a testament to the extent of development that has brought Elizabeth City to its current state.

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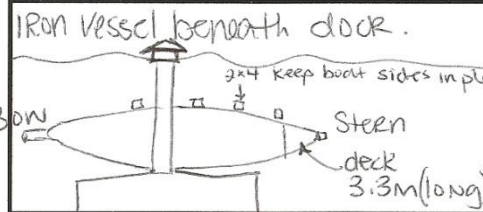
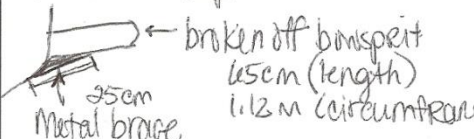
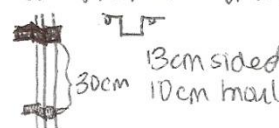
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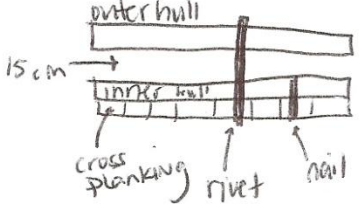
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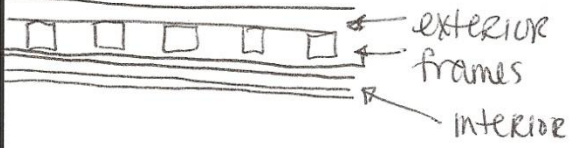
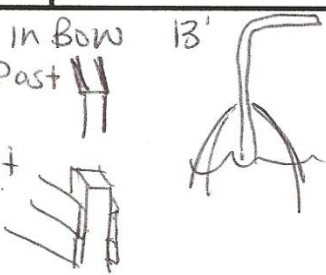
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APPENDIX A: ELIZABETH CITY FIELDWORK PROFORMA

ELIZABETH CITY SHIPS' GRAVEYARD				VESSEL NUM:	0001	PQR
NAME(S):	Janette Hayman, Eric Ray			DATE:	20 Aug 2009	
	Lindsay Smith, Peter Campbell			TIME:	11 AM	
POSITION:	- E			- DATUM		
	- N			- ORIENTED (BOW-STERN)		
SITE DESC:	<input type="checkbox"/> DRY <input type="checkbox"/> SUBMERGED <input type="checkbox"/> INUNDATED					
<p>Iron vessel beneath dock. Sternpost 2.05m (height) 11cm (sided) 15cm (moulded)</p>  <p>Wale 20cm sided 12cm moulded</p>						
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:	
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:	
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:	
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN	
BOILERS:	SQUARE		CIRCULAR	NONE		
STERN DESC:	Pointed, sternpost, no apparent fastenings for rudder.					
BOW DESC:	Pointed, bowsprit remaining					
DIMENSIONS:	38.74m : LENGTH		7.2m : BEAM		1.5m (to sediment) : DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED	
EXT. STRAKES:	Iron plate: PORT : STBD					
FRAMES #:	L, 1, 1 : PORT : STBD		~ 38-40cm apart			
INT. CEILINGS:	Iron plate: PORT : STBD					
STANCHION:	Multiple stanchions : NUM					
BULKHEAD: (3)	lengths from sternpost, aft : NUM		① 9m	② 12.45m	③ 17m	
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION	
	Desc: Burnt wood in hold along with coal		Desc: Maybe change from sail to engine?		Desc: Definite salvage of iron plating on sides down to waterline	
ADDITIONAL OBSERVATIONS:						
<ul style="list-style-type: none"> Holes below waterline along hull (longitudinally) obscured any evidence that there was possibly a prop shaft. Wooden bowsprit clamps on frames (riveted in place)  						
- wood longitudinal along the stringers → composite constructions.						

ELIZABETH CITY SHIPS' GRAVEYARD				VESSEL NUM:		0002 PQR	
NAME(S):		Nolan Caudell		DATE:		21 March 2009	
		Jessica Smeeks		TIME:		All Day 9:00-5:00	
POSITION:	Bow	188	0391448	- E	WG 84 - DATUM		
			4018288	- N	- ORIENTED (BOW-STERN)		
SITE DESC:		DRY (SUBMERGED) + (INUNDATED) some visible STERN 188 0391492 / 4018327 Group of 4 vessels off E shore above 158 bridge. Mostly submerged - interior debris, no access to hold and bottom construction Some metal box/parts/pipes found in hull no prop shaft evidence / no mast/steps seen / no machinery found					
HULL MATERIAL:		(WOOD)		STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:		TREENAILS		(IRON)	COPPER	SCREWS	OTHER:
PROPULSION:		(TOWED)		SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:		STEAM		GASOLINE	DIESEL	UNKNOWN	
BOILERS:		SQUARE		CIRCULAR	(NONE)		
STERN DESC:		12ft deep water curved					
BOW DESC:		8ft deep water pointed					
DIMENSIONS:		61.30 m : LENGTH		6.40 m : BEAM		: DEPTH	
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED	
EXT. STRAKES:		edge joint		: STBD	18m average		
FRAMES #:		: PORT		: STBD			
INT. CEILINGS:		: PORT		: STBD			
STANCHION:		2 w/cast iron		on wood	NUM		
BULKHEAD:				: NUM			
ABANDONMENT SIGNATURE:		BURNING		MODIFICATIONS		SALVAGE DESCRIPTION	
		Desc:		Desc:		Desc:	
ADDITIONAL OBSERVATIONS: Beam taken 30.65 m from stern. 15cm gap b/t hull and inner planking Double diagonal inner planking   * Machine-cut wood							

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	
NAME(S):		0003 PQR	
Jessica Smeeks		DATE: 22 March 2009	
Nolan Candell		TIME:	
POSITION:	18 S 0391452 - E UTM - DATUM		
Bow	4018280 - N 54° - ORIENTED (BOW-STERN)		
SITE DESC:	DRY SUBMERGED INUNDATED		
stern 18S 0391498 / 4018321 62 m. off E bank of the River. Second vessel in a group of 4			
HULL MATERIAL:	WOOD STEEL IRON COMPOSITE OTHER:		
FASTENINGS:	TREENAILS IRON COPPER SCREWS OTHER:		
PROPULSION:	TOWED SAIL ENGINE SCREW OTHER:		
ENGINE TYPE:	STEAM GASOLINE DIESEL UNKNOWN		
BOILERS:	SQUARE CIRCULAR NONE		
STERN DESC:	12-13 ft depth rounded/curved		
BOW DESC:	8-9 ft depth pointed		
DIMENSIONS:	62.22 : LENGTH	6.72 : BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT : STBD		
FRAMES #:	: PORT : STBD		
INT. CEILINGS:	: PORT : STBD		
STANCHION:	iron on stanchions 7 : NUM		
BULKHEAD:	: NUM		
ABANDONMENT SIGNATURE:	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION
	Desc:	Desc:	Desc:
ADDITIONAL OBSERVATIONS:			
<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>Intake box Iron 30cm 45cm</p> <p>iron bracing in bow crossbeams</p> </div> <div style="width: 60%;"> <p>square nails / rivets / iron rods</p> <ul style="list-style-type: none"> iron bracing and turnbuckles hawshole <p>steering mechanism</p> <p>Double diagonal interior planking</p> <p>← 3 layers</p> </div> </div>			

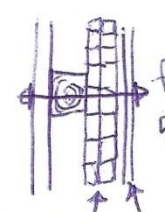
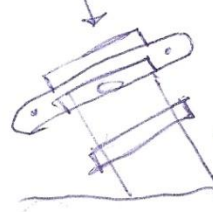
ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	
NAME(S):		0004 PQR	
Nicole Witting		DATE: 21 March 2009	
Jennifer Jones		TIME: 9:00-5:00 All Day	
POSITION:		WGS 84 - DATUM	
18S 0391504		- E	
Steen		4018319 - N 49° - ORIENTED (BOW-STERN)	
SITE DESC:		<input type="checkbox"/> DRY <input checked="" type="checkbox"/> SUBMERGED <input type="checkbox"/> INUNDATED	
Group of 4 vessels on E side of River ≈ 10m off the shore. 3rd in group. ≈ 12 ft - 8 ft depth of water			
HULL MATERIAL:	<input checked="" type="checkbox"/> WOOD <input type="checkbox"/> STEEL <input type="checkbox"/> IRON <input type="checkbox"/> COMPOSITE <input type="checkbox"/> OTHER:		
FASTENINGS:	<input type="checkbox"/> TREENAILS <input checked="" type="checkbox"/> IRON <input type="checkbox"/> COPPER <input type="checkbox"/> SCREWS <input type="checkbox"/> OTHER:		
PROPULSION:	<input type="checkbox"/> TOWED <input type="checkbox"/> SAIL <input type="checkbox"/> ENGINE <input type="checkbox"/> SCREW <input type="checkbox"/> OTHER:		
ENGINE TYPE:	<input type="checkbox"/> STEAM <input type="checkbox"/> GASOLINE <input type="checkbox"/> DIESEL <input type="checkbox"/> UNKNOWN		
BOILERS:	<input type="checkbox"/> SQUARE <input type="checkbox"/> CIRCULAR <input type="checkbox"/> NONE		
STERN DESC:	Curved		
BOW DESC:	towards shore / pointed		
DIMENSIONS:	199 ft : LENGTH 20 ft : BEAM : DEPTH		
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M): LENGTH SIDED MOULDED		
EXT. STRAKES:	: PORT : STBD		
FRAMES #:	: PORT : STBD		
INT. CEILINGS:	: PORT : STBD		
STANCHION:	(5) metal Plankton : NUM		
BULKHEAD:	: NUM		
ABANDONMENT	BURNING MODIFICATIONS SALVAGE DESCRIPTION		
	Desc:		
SIGNATURE:	Desc:		
ADDITIONAL OBSERVATIONS:			
Intake/outtake pipe Double diagonal interior planking  exterior frames interior Iron pipe in Bow Rudder Post Sternpost  13'			

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0005 PQR	
NAME(S):	Jennifer E. Jones	DATE:	21-March 2009	
	Nicole Witting	TIME:	9:00AM - 5:00PM	
POSITION: STERN	4018 299 E	- E	UTM 188	- DATUM
	039 1499 N	- N	±5 NE/SE	ORIENTED (BOW-STERN)
SITE DESC:	DRY	SUBMERGED	INUNDATED	
<p>Measurements in feet + tenths</p> <p>Air temp ~43°</p> <p>Water temp ~43°</p> <p>Calm water than 3/21 but water level is higher too.</p> <p>Vessel covered in vegetation but not completely inundated</p> <p>appears identical to 432 vessel</p>				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS
PROPULSION:	TOWED	SAIL	ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:	Rounded			
BOW DESC:	Pointed			
DIMENSIONS:	200 ft	LENGTH	: BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD		
INT. CEILINGS:	: PORT	: STBD		
STANCHION:	8 visible above water	: NUM		
BULKHEAD:		: NUM		
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS	
	Desc: sternpost burning and on stbd wall		Desc: no machinery seen	
ADDITIONAL OBSERVATIONS:				
<p>Possible Keelson + Rider felt in bow and two possible stringers</p> <p>bulkhead (possibly) 9ft from stern</p> <p>Drift pin spacing (consistent)</p> <p>large pipe in bow and intake pipes in stern</p> <p>double diagonal interior planking</p>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0006	PQR
NAME(S):	Lindsay Smith Peter Campbell		DATE:	21 Aug 2009
			TIME:	2:00 PM
POSITION:			- E	- DATUM
			- N	- ORIENTED (BOW-STERN)
SITE DESC:	DRY <u>SUBMERGED</u> INUNDATED Located adjacent to (2) large partially visible barges recorded by Dilk + Brown. Appears to have 4 hatches elevated from the deck .85m Deck level pointed bow unknown bottom type			
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW OTHER: WIRES all over vessel
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:	square/flat unknown if angled			
BOW DESC:	pointed with a deck on it			
DIMENSIONS:	18.8m	: LENGTH	5.19m	: BEAM
			.85m	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD		
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:		: NUM		
ABANDONMENT	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION	
SIGNATURE:	Desc:	Desc:	Desc: wires on outside may be remains of salvaged engine + electric components.	
ADDITIONAL OBSERVATIONS:				
Some iron pieces on exterior construction of hatches. Deckbeams cambered with deck. 11cm sided x 14.5cm moulded. deck clamp 70cm height inside corner of hatch. may be original height of combing. 3.59m 1.0m spacers separating hatches. 4 Hatches 2.17m * Square-sided				

→ too deep to get total depth.

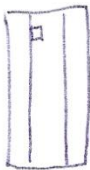

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	
		0007 PQR	
NAME(S):	Stephen Dilk	DATE:	21 March 09
	Brown Minus	TIME:	9:00am - 5pm
POSITION:	4018197E - E	WGS 84	UTM 185 - DATUM
	0391573 N ±30 - N	220° N	- ORIENTED (BOW-STERN)
SITE DESC:	<input type="checkbox"/> DRY <input type="checkbox"/> SUBMERGED <input checked="" type="checkbox"/> INUNDATED		
- bow facing Machellie shore, not completely submerged but close - stern is partially destroyed - identical vessel 0008 and completely submerged vessel 0006PQR on either side of 0007			
HULL MATERIAL:	<input checked="" type="radio"/> WOOD <input type="radio"/> STEEL <input type="radio"/> IRON <input type="radio"/> COMPOSITE <input type="radio"/> OTHER:		
FASTENINGS:	<input type="radio"/> TREENAILS <input checked="" type="radio"/> IRON <input type="radio"/> COPPER <input type="radio"/> SCREWS <input type="radio"/> OTHER: nails, drift pins w/ washers		
PROPULSION:	<input checked="" type="radio"/> TOWED <input type="radio"/> SAIL <input type="radio"/> ENGINE <input type="radio"/> SCREW <input type="radio"/> OTHER:		
ENGINE TYPE:	<input type="radio"/> STEAM <input type="radio"/> GASOLINE <input type="radio"/> DIESEL <input checked="" type="radio"/> UNKNOWN		
BOILERS:	<input type="radio"/> SQUARE <input type="radio"/> CIRCULAR <input checked="" type="radio"/> NONE		
STERN DESC:	rounded		
BOW DESC:	pointed		
DIMENSIONS:	* 187.2 ft : LENGTH	21 ft : BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT : STBD		
FRAMES #:	: PORT : STBD	2-4' apart	
INT. CEILINGS:	: PORT : STBD		7"
STANCHION:	5 visible : NUM		
BULKHEAD:	: NUM		
ABANDONMENT SIGNATURE:	<input checked="" type="checkbox"/> BURNING Desc: See burning at waterline on side planking	<input type="checkbox"/> MODIFICATIONS Desc:	<input type="checkbox"/> SALVAGE DESCRIPTION Desc: no steering mechanics (visible in vessel 0008)
	ADDITIONAL OBSERVATIONS: Visible keelson in bow, over 1ft moulded. * Estimated another eight to ten feet beyond the end of the tape measure. - double diagonal internal strakes. - two bulkheads, suggested third bulkhead was destroyed w/ one end of the vessel (stern)		

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	7008 PQR	
NAME(S):	Brown Mims	DATE:	22 March 09	
	Stephan Dilk	TIME:	9-5 PM	
POSITION:	- E	- DATUM		
	- N	- ORIENTED (BOW-STERN)		
SITE DESC:	DRY	SUBMERGED	INUNDATED	
North side of Machelhe Island on Chouan side of River. High temp 58°, water temp 40°, actual air temp 42°. - Bow pointed to shore ~100 yards from modern wharf.				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS
PROPULSION:	TOWED	SAIL	ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:	rounded			
BOW DESC:	pointed + stempost			
DIMENSIONS:	206' ft : LENGTH	21' ft : BEAM	4-9' water : DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD		
INT. CEILINGS:	: PORT	: STBD		
STANCHION:	At least 10	: NUM		
BULKHEAD:		: NUM		
ABANDONMENT SIGNATURE:	BURNING Desc: evident on sides to the waterline		MODIFICATIONS Desc: weathering patterns on wood	
			SALVAGE DESCRIPTION Desc: less iron than on 0007 but more mechanical elements	
ADDITIONAL OBSERVATIONS:				
- steering quadrant in stern  - piping in bow was marked with "CRANE" - keelson + rider - piping cast iron - bolts cast iron - presence of welding - two hatch areas 				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0010 PQR	
NAME(S):	Stephanie Gandulla		DATE:	21 March 2009
			TIME:	9:00-5:00pm
POSITION: 18S	4018088	- E	UTM 84	- DATUM
	0391828	- N	±5	- ORIENTED (BOW-STERN)
SITE DESC:	DRY	SUBMERGED	<u>INUNDATED</u>	
<p>Temperature 43° Water 42°</p>				
HULL MATERIAL:	<u>WOOD</u>	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	<u>IRON</u>	COPPER	SCREWS
PROPULSION:	<u>TOWED</u>	SAIL	ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	<u>UNKNOWN</u>
BOILERS:	SQUARE	CIRCULAR	<u>NONE</u>	
STERN DESC:	Square double ended			
BOW DESC:				
DIMENSIONS:	90'	: LENGTH	26'	: BEAM
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD	Smallest - largest 10-25 cm	10-25 cm
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:	6 bulkheads	: NUM	8.2m wide	
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS	
	Desc:		Desc:	
		Pilings to keep in place		SALVAGE DESCRIPTION
				Desc:
<p>ADDITIONAL OBSERVATIONS:</p> <p>mostly submerged end frames 18x25 cm (S) (M)</p> <p>bulkheads spaced 3-to-m apart / edge joined 2 ends severely eroded</p>				

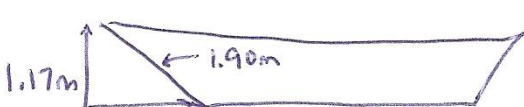
ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0011 PQR	
NAME(S):	John Ratcliffe	DATE:	27 March 2009	
	Stephanie Gandulla	TIME:	9:00-5:00pm	
POSITION:	4018091 - E	WGS 84	- DATUM	
	18S 6391845 - N	± 5	- ORIENTED (BOW-STERN)	
SITE DESC:	DRY SUBMERGED	INUNDATED		
<p>Appears identical to 0010PQR.</p> <p>Approximately 50m off an active dock/marina.</p> <p>Temp 48-52°F</p> <p>10-30cm deep mud.</p>				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:	Double ended square			
BOW DESC:	" " " "			
DIMENSIONS:	26.6m : LENGTH	8.2m : BEAM	1-3m hull depth 1-2m water : DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M): LENGTH SIDED MOULDED			
EXT. STRAKES:	5-6 remaining : PORT	: STBD		
FRAMES #:	23 : PORT	: STBD	25cm	25cm * largest
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:	5	: NUM		
ABANDONMENT	BURNING		MODIFICATIONS	
	Desc:		Desc:	
SIGNATURE:			SALVAGE DESCRIPTION	
<p>ADDITIONAL OBSERVATIONS:</p> <p>Frames were concentrated at the bulkheads.</p> <p>Drift pins / square spikes / bolt assemblies (fasteners)</p> <p>Ends raked slightly less than 45°</p> <p>Machine-made fastenings + lumber.</p>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0012 OR 0013 PQR	
NAME(S):	Laura Kate Schnitzer		DATE:	21 March 2009
	Ben Siegel		TIME:	9:00-5:00 AM
POSITION:	- E		- DATUM	
	- N		- ORIENTED (BOW-STERN)	
SITE DESC:	DRY <input type="checkbox"/> SUBMERGED <input checked="" type="checkbox"/> INUNDATED <input type="checkbox"/>			
Partially submerged 300' from shore Seems jammed intentionally 2 stumps and a tree for placement 50°F and Sunny - 2 in visibility				
HULL MATERIAL:	WOOD <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> IRON <input type="checkbox"/> COMPOSITE <input type="checkbox"/> OTHER: <input type="checkbox"/>			
FASTENINGS:	TREENAILS <input type="checkbox"/> IRON <input checked="" type="checkbox"/> COPPER <input type="checkbox"/> SCREWS <input type="checkbox"/> OTHER: <input type="checkbox"/>			
PROPULSION:	TOWED <input type="checkbox"/> SAIL <input type="checkbox"/> ENGINE <input type="checkbox"/> SCREW <input type="checkbox"/> OTHER: <input type="checkbox"/>			
ENGINE TYPE:	STEAM <input type="checkbox"/> GASOLINE <input type="checkbox"/> DIESEL <input type="checkbox"/> UNKNOWN <input checked="" type="checkbox"/>			
BOILERS:	SQUARE <input type="checkbox"/> CIRCULAR <input type="checkbox"/> NONE <input checked="" type="checkbox"/>			
STERN DESC:	square ended			
BOW DESC:	" "			
DIMENSIONS:	27.5m * : LENGTH		8.3m average : BEAM	
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):		
EXT. STRAKES:	: PORT	: STBD	LENGTH	SIDED
FRAMES #:	: PORT	: STBD		
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:	4	: NUM		
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS	
	Desc:		Desc:	
		SALVAGE DESCRIPTION		
		Desc:		
ADDITIONAL OBSERVATIONS:				
<div style="display: flex; justify-content: space-around;"> <div> <p>T = tree</p> </div> <div> <p>hopper barge crane</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div> <p>* no apparent machinery</p> </div> <div> <p>* Submerged end is estimated</p> </div> </div>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0014 PQR	
NAME(S):	Rob Munford	DATE:	21-March-2009	
	Valerie Russel	TIME:	9:00-5:00 PM	
POSITION: South 183 North	0392231 / 4018231 - E	WGS 84	- DATUM	
	0392203 / 4018246 - N		- ORIENTED (BOW-STERN)	
SITE DESC:	DRY	SUBMERGED	INUNDATED	
Feet + tenths, water temp ~46°, visibility ~7 inches Riverside is more deteriorated Tree growing out of wreck				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS
PROPULSION:	TOWED	SAIL	ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:	square, raked, double ended			
BOW DESC:				
DIMENSIONS:	116'	: LENGTH	37'	: BEAM
			6.6'	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	Evenly spaced	: PORT	: STBD	7.2' apart
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:		: NUM		
ABANDONMENT	BURNING		MODIFICATIONS	
	Desc:		Desc:	
SIGNATURE:			SALVAGE DESCRIPTION	
				Desc:
ADDITIONAL OBSERVATIONS:				
 longitudinal bulkheads				
Large towing bits on north-end may indicate bow OR the bits on south end were gone making it double-ended. 10 end-frames.				
 Nail pattern				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM: 0014 PQR	
NAME(S):	Jeanette Hayman Eric Ray		DATE: 21 Aug 2009 TIME: 4:00 PM
POSITION: 183	0392220	- E ±19.4	- DATUM
utm	4018241	- N NW/SE	- ORIENTED (BOW-STERN)
SITE DESC:	<input type="checkbox"/> DRY <input checked="" type="checkbox"/> SUBMERGED <input type="checkbox"/> INUNDATED		
Investigated site 0087. Mostly submerged with a tree growing on the E side of vessel. Approximately 40m off shore.			
HULL MATERIAL:	<input checked="" type="checkbox"/> WOOD <input type="checkbox"/> STEEL <input type="checkbox"/> IRON <input type="checkbox"/> COMPOSITE <input type="checkbox"/> OTHER:		
FASTENINGS:	<input type="checkbox"/> TREENAILS <input checked="" type="checkbox"/> IRON <input type="checkbox"/> COPPER <input type="checkbox"/> SCREWS <input type="checkbox"/> OTHER:		
PROPULSION:	<input checked="" type="checkbox"/> TOWED <input type="checkbox"/> SAIL <input type="checkbox"/> ENGINE <input type="checkbox"/> SCREW <input type="checkbox"/> OTHER:		
ENGINE TYPE:	<input type="checkbox"/> STEAM <input type="checkbox"/> GASOLINE <input type="checkbox"/> DIESEL <input type="checkbox"/> UNKNOWN		
BOILERS:	<input type="checkbox"/> SQUARE <input type="checkbox"/> CIRCULAR <input checked="" type="checkbox"/> NONE		
STERN DESC:			
BOW DESC:			
DIMENSIONS:	34.90m : LENGTH	11.10m : BEAM	2.11m : DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M): LENGTH SIDED MOULDED		
EXT. STRAKES:	: PORT	: STBD	
FRAMES #:	60cm apart	: STBD	25cm 25cm
INT. CEILINGS:	: PORT	: STBD	
STANCHION:		: NUM	
BULKHEAD:	2 longitudinal (towing bitts inboard)	NUM	
ABANDONMENT SIGNATURE:	BURNING Desc:		MODIFICATIONS Desc:
	SALVAGE DESCRIPTION Desc:		
ADDITIONAL OBSERVATIONS: <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>2 towing bitts (riverside end of barge)</p> <p>assumed there are 2 sets b/c existing is not centered in hull.</p> <p>At least 2 longitudinal bulkheads</p> </div> <div style="width: 35%;"> <p>2 timbers back to back w/o space - inset from the bulkhead.</p> </div> </div>			

10.10 9.25 8.4 7.5 6.6 5.15 4.75 3.85 3.5 2.2 1.2 Bow

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0015 PQR	
NAME(S):	Ben Siegel Kaura Kate Schmitzer		DATE:	22 March 2019
POSITION: Bow	0392421 / 4018388	- E	TIME:	9:00 - 5:00pm
18S Stern	0392423 / 4018362	- N	UTM 84 - DATUM	
SITE DESC:	<input type="checkbox"/> DRY <input type="checkbox"/> SUBMERGED <input type="checkbox"/> INUNDATED			
Temp (water) 50s Vessel is in open water with a N/S orientation 13m from shore				
HULL MATERIAL:	<input checked="" type="radio"/> WOOD <input type="radio"/> STEEL <input type="radio"/> IRON <input type="radio"/> COMPOSITE <input type="radio"/> OTHER:			
FASTENINGS:	<input type="radio"/> TREENAILS <input checked="" type="radio"/> IRON <input type="radio"/> COPPER <input type="radio"/> SCREWS <input type="radio"/> OTHER:			
PROPULSION:	<input checked="" type="radio"/> TOWED <input type="radio"/> SAIL <input type="radio"/> ENGINE <input type="radio"/> SCREW <input type="radio"/> OTHER:			
ENGINE TYPE:	<input type="radio"/> STEAM <input type="radio"/> GASOLINE <input type="radio"/> DIESEL <input checked="" type="radio"/> UNKNOWN			
BOILERS:	<input type="radio"/> SQUARE <input type="radio"/> CIRCULAR <input checked="" type="radio"/> NONE			
STERN DESC:	double ended square			
BOW DESC:				
DIMENSIONS:	26m	: LENGTH	8.05m	: BEAM
			2.13m	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M): <input type="checkbox"/> LENGTH <input type="checkbox"/> SIDED <input type="checkbox"/> MOULDED			
EXT. STRAKES:	: PORT		: STBD	
FRAMES #:	: PORT		: STBD	
INT. CEILINGS:	: PORT		: STBD	
STANCHION:	: NUM			
BULKHEAD:	: NUM			
ABANDONMENT	BURNING		MODIFICATIONS	
SIGNATURE:	Desc:		Desc:	
SALVAGE DESCRIPTION				
Desc:				
ADDITIONAL OBSERVATIONS:				
 <p>Bolt assemblies, drift bolts Edge fastened and bolted to frames.</p>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	
NAME(S):		0016 PQR	
Valerie Rissel		DATE: 22 March - 2009	
Bob Minford		TIME: 9:00 - 5:00 PM	
POSITION:	- E	- DATUM	
	- N	- ORIENTED (BOW-STERN)	
SITE DESC:	DRY	SUBMERGED	INUNDATED
Feet + Tenths. , water temp ~ 46° Visibility 7 inches, depth 3-6.5 ft., Water temp 52° Air temp 58°			
HULL MATERIAL:	WOOD	STEEL	IRON COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER SCREWS OTHER:
PROPULSION:	TOWED	SAIL	ENGINE SCREW OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE
STERN DESC:			
BOW DESC:			
DIMENSIONS:	52' : LENGTH	27.6' : BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT	: STBD	
FRAMES #:	: PORT	: STBD	
INT. CEILINGS:	: PORT	: STBD	1.0'
STANCHION:		: NUM	
BULKHEAD:	3	: NUM	
ABANDONMENT SIGNATURE:	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION
	Desc:	Desc:	Desc:
ADDITIONAL OBSERVATIONS: <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> </div> <div style="flex: 2;"> <p>• bolts and spikes/nails</p> <p>3 longitudinal bulkheads</p> <p>- approx width of longitudinal areas is 9.0' each</p> <p>keel-like stringer in between w/ riders</p> <p>log raft?</p> </div> <div style="flex: 1;"> <p>Bulkhead wall + stringer keel-like assembly</p> </div> </div>			

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0018	PQR
NAME(S):	Jeanette Hayman	DATE:	20 Aug 2009	
	Eric Ray	TIME:	3:30 PM	
POSITION:	- E	- DATUM		
	- N	- ORIENTED (BOW-STERN)		
SITE DESC:	DRY	SUBMERGED		
North of sewage plant.				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS
PROPULSION:	TOWED	SAIL	ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:				
BOW DESC:				
DIMENSIONS:	35 m	: LENGTH	9.06 m	: BEAM
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):	LENGTH	SIDED
EXT. STRAKES:	4 above sediment	: STBD	26 cm	10 cm
FRAMES #:	9 m apart	: STBD	14 m	14 m
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:		: NUM		
ABANDONMENT SIGNATURE:	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION	
	Desc:	Desc:	Desc:	
ADDITIONAL OBSERVATIONS:				
<p>Possibly painted red/yellow</p> <p>Ext. strakes, frames, + ceilings held together by single bolt, all the way thru frames</p> <p>Ceilings mostly intact</p> <p>0.27m</p> <p>Diagonal athwartships bracing?</p>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0019 PQR		
NAME(S):	Lindsay Smith	DATE:	20 Aug 2009		
	Peter Campbell	TIME:	3:30pm		
POSITION:	- E	- DATUM			
	- N	NE/SW - ORIENTED (BOW-STERN)			
SITE DESC:	DRY SUBMERGED INUNDATED NE of waste treatment plant. Investigating target 0018. Double-ended barge. Angled ends. No longitudinal bulkheads. Possibly full of rocks (to keep in place?) Parallel to shore. 3-4 meters from shore, depth of water over left				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER: machine made
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	NONE	
STERN-DESC:	Both ends framed, streaked horizontally, angled ~50°				
BOW-DESC:	vertically				
DIMENSIONS:	20.55 m	: LENGTH	8.46 m	: BEAM	1.80 m : DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD		13 cm	5 cm
FRAMES #:	86 cm : PORT	: STBD		18 cm	15.5 cm
INT. CEILINGS:	: PORT	: STBD			
STANCHION:	male runs along shore-side		: NUM	exterior 25 cm	10 cm
BULKHEAD:			: NUM		
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc: Water worn down no evidence of fire		Desc:		Desc:
ADDITIONAL OBSERVATIONS:					
* Depth not to bottom of hold due to debris in the way. - Accurate width as both sides still partially intact. - Interior full of debris, both wood and sediment + rocks. - Iron fastenings driven vertically down the strakes and horizontally through the frames down the hull's sides.					



on opposite sides

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0021 PQR		
NAME(S):	Whitney Petray		DATE:	21 March 2009	
	Joseph Lengierza		TIME:	12:00-5:00 PM	
POSITION:			- E - DATUM		
			- N - ORIENTED (BOW-STERN)		
SITE DESC:	DRY SUBMERGED INUNDATED				
No longer present in their known location - a single iron fastening was found.					
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	NONE	
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM	: DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD			
INT. CEILINGS:	: PORT	: STBD			
STANCHION:	: NUM				
BULKHEAD:	: NUM				
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0022 PQR		
NAME(S):	Whitney Peckay		DATE:	21 March 2009	
	Joseph Lengieza		TIME:	12:00 - 5:00 pm	
POSITION:			- E	- DATUM	
			- N	- ORIENTED (BOW-STERN)	
SITE DESC:	DRY SUBMERGED INUNDATED				
No longer present in known location. - A single IRon fastening was found.					
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	NONE	
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM	: DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD			
INT. CEILINGS:	: PORT	: STBD			
STANCHION:	: NUM				
BULKHEAD:	: NUM				
ABANDONMENT	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
SIGNATURE:					
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0023 PQR	
NAME(S):	Whitney Pottery	DATE:	21 March 2009	
	Joseph Lengiza	TIME:		
POSITION: Part A	36° 18.026' N	UTM	WG584 - DATUM	
	076° 12.972' W	260° magnetic	ORIENTED (BOW-STERN)	
SITE DESC:	DRY	SUBMERGED	INUNDATED	
<p>Perpendicular to shore, below 158 bridge in Camden county side of the river about 350' from bridge</p> <p>Cypress tree growing in bow</p> <p>1.5' of mud and 3-5 ft of water</p> <p>Part B 36° 18.028' N / 076° 12.992' W</p>				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS
PROPULSION:	TOWED	SAIL	+ ENGINE	SCREW
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:				
BOW DESC:				
DIMENSIONS:	~ 50'	: LENGTH	: BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD		
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:		: NUM		
ABANDONMENT SIGNATURE:	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION	
	Desc:	Desc:	Desc:	
ADDITIONAL OBSERVATIONS:				
<p>Much deteriorated from previous arch. investigations</p> <p>Stempost 5' long, 6' wide, .8' molded Sternpost 16' square</p> <p>Driftpins</p> <p>- Huge debris piles north of vessel are remains of 0024 and 0025 PQR.</p>				

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0024 PQR		
NAME(S):	Whitney Petrey		DATE:	21 March 2009	
	Joseph Lengieza		TIME:	12:00 - 5:00 pm	
POSITION:	- E		- DATUM		
	- N		- ORIENTED (BOW-STERN)		
SITE DESC:	DRY SUBMERGED INUNDATED No longer present in known location. - Can feel disarticulated timbers approx 1-1½ ft. down into the muddy substrait				
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	NONE	
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM		: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT : STBD				
FRAMES #:	: PORT : STBD				
INT. CEILINGS:	: PORT : STBD				
STANCHION:	: NUM				
BULKHEAD:	: NUM				
ABANDONMENT	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
SIGNATURE:					
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0025 PQR		
NAME(S):	Whitney Petely	DATE:	21 March 2009		
	Joseph Lengieza	TIME:	12:00 - 5:00 pm		
POSITION:	- E	- DATUM			
	- N	- ORIENTED (BOW-STERN)			
SITE DESC:	DRY SUBMERGED INUNDATED				
No longer present in known location - can feel disarticulated timbers approx 1-1 1/2 ft down into the muddy substrait					
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN	
BOILERS:	SQUARE	CIRCULAR	NONE		
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM		: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD			
INT. CEILINGS:	: PORT	: STBD			
STANCHION:	: NUM				
BULKHEAD:	: NUM				
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:	Desc:	Desc:		
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0026 PQR		
NAME(S):	Joseph Lengieza		DATE:	21 March 2019	
	Whitney Roteley		TIME:	12:00 - 5:10pm	
POSITION:					
	- E		- DATUM		
	- N		- ORIENTED (BOW-STERN)		
SITE DESC:	DRY SUBMERGED INUNDATED				
- Investigated area southeast of 0023PQR and found remains of 0026PQR, badly deteriorated and barely recognizable from the 1985 survey.					
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	NONE	
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM	: DEPTH	
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD			
INT. CEILINGS:	: PORT	: STBD			
STANCHION:		: NUM			
BULKHEAD:		: NUM			
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	6030 PQR		
NAME(S):	Whitney Petreey	DATE:	21 March 2019		
	Joseph Lengkeza	TIME:	12:05 - 5:05 pm		
POSITION:	- E	- DATUM			
	- N	- ORIENTED (BOW-STERN)			
SITE DESC:	DRY	SUBMERGED	INUNDATED		
No longer present in known location. - a single iron fastener found in area.					
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN	
BOILERS:	SQUARE	CIRCULAR	NONE		
STERN DESC:					
BOW DESC:					
DIMENSIONS:	: LENGTH		: BEAM		: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD			
INT. CEILINGS:	: PORT	: STBD			
STANCHION:		: NUM			
BULKHEAD:		: NUM			
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0051 PQR
NAME(S):	Lindsay Smith Peter Campbell	DATE:	21 Aug 2009
		TIME:	11:00 Am
POSITION:	- E	- DATUM	
	- N	NE/SW	- ORIENTED (BOW-STERN)
SITE DESC:	DRY (SUBMERGED)	INUNDATED	
Investigated target # 0019 and found barge north of that area. Vessel is very degraded, parallel to shore, partially overgrown by the trees and bush			
HULL MATERIAL:	WOOD	STEEL	IRON COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER SCREWS OTHER: machine made
PROPULSION:	TOWED	SAIL	ENGINE SCREW OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE
STERN DESC:	Square-ended, and flat transom (no angle)		
BOW DESC:	SW end more degraded than NE end		
DIMENSIONS:	12.33 m : LENGTH	6.43 m : BEAM	1.0 m : DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT : STBD		30 cm 4.1 cm
FRAMES #:	none / chine big inside : PORT : STBD		38 cm 24.2 cm
INT. CEILINGS:	none : PORT : STBD		
STANCHION:	End strakes : NUM		33 cm 11 cm
BULKHEAD:	possibly in top of stringers NUM but too degraded to measure		
ABANDONMENT SIGNATURE:	BURNING Desc: wood seemed worn down not burned	MODIFICATIONS Desc: none found	SALVAGE DESCRIPTION Desc: none found

ADDITIONAL OBSERVATIONS:

chine side strakes (width) 18.8 cm ← 3 stringers
(height) 25 cm
(apart) 67.2 cm

bottom strakes (Run athwartships) 28 cm x 8 cm

- fasteners horizontally into chine are 78 cm apart
- fasteners vertically into strakes are 45 cm apart
- 10 cm inset from end a large transverse timber rests on top of the chine and all 3 stringers.

23 cm x 26 cm sided

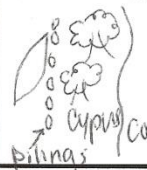
ext. side strakes

Bottom Strakes

Longitudinal bulkheads on top of stringer

Bolts go thru 2 strakes only.

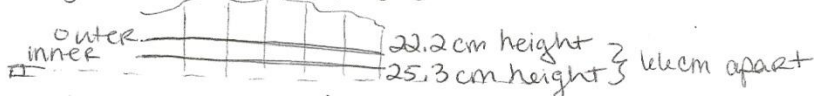
45 cm 90 cm 78 cm

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0052 PQR
NAME(S):	Lindsay Smith Peter Campbell	DATE:	21 Aug 2009
		TIME:	12:00 PM
POSITION:	- E - N	- DATUM SW/NE ORIENTED (BOW-STERN)	
SITE DESC:	DRY (SUBMERGED)	INUNDATED	
East bank of River, north of bridge, Target #0021  Vessel is abutted to the pilings, parallel to shore. Sediment is somewhat harder than other areas Cypres coastline pilings			
HULL MATERIAL:	WOOD	STEEL	IRON
FASTENINGS:	TREENAILS	IRON	COPPER
PROPULSION:	TOWED	SAIL	ENGINE
ENGINE TYPE:	STEAM	GASOLINE	DIESEL
BOILERS:	SQUARE	CIRCULAR	NONE
STERN DESC:	unable to determine bow from stern but		
BOW DESC:	deep SW end more intact and NE end has a post		
DIMENSIONS:	28.31 m : LENGTH	7.15 m : BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED
EXT. STRAKES:	IRON plate	PORT	STBD
FRAMES #:	L shaped pointing NE end	10m	5cm
INT. CEILINGS:	IRON plate	PORT	STBD
STANCHION:	None found	: NUM	
BULKHEAD:	None found	: NUM	
ABANDONMENT	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION
SIGNATURE:	Desc:	Desc:	Desc:

ADDITIONAL OBSERVATIONS:

2 stringers found.

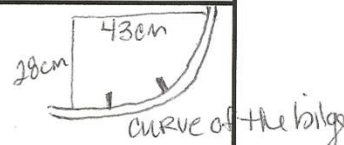
piling line



(Riverside more degraded)

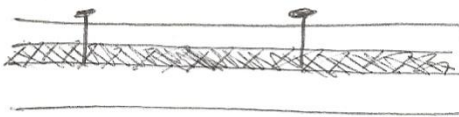
* frames may change from L to T shaped towards middle

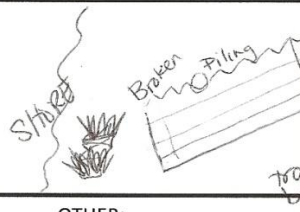
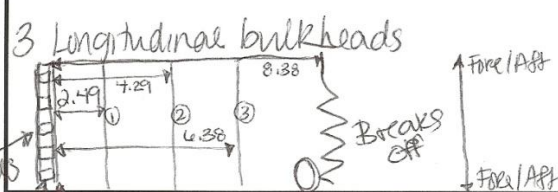
* wood debris inside vessel may suggest decking or wood component

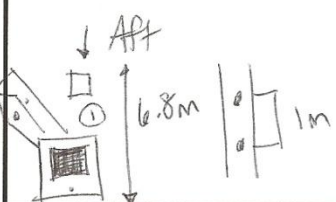


curve of the bilge

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM: 0053 PQR	
NAME(S): Jeanette Hayman Eric Ray		DATE: 21 Aug 2009	
		TIME: 10:56 AM	
POSITION:	- E	- DATUM	
	- N	- ORIENTED (BOW-STEM)	
SITE DESC:	DRY SUBMERGED INUNDATED		
Bow is above water, perpendicular to land, boat attached to tree with rope, tree is on portside, nice plant growth weathered and broken, electrical wiring, mounting for light metal rubrail, sides falling outward, fiberglass			
HULL MATERIAL:	WOOD STEEL IRON COMPOSITE OTHER:		
FASTENINGS:	TREENAILS IRON? COPPER SCREWS OTHER: Metal (new style fastenings)		
PROPULSION:	TOWED SAIL ENGINE SCREW OTHER:		
ENGINE TYPE:	STEAM GASOLINE DIESEL UNKNOWN		
BOILERS:	SQUARE CIRCULAR NONE		
STERN DESC:	Indiscernable tank where stern should be (2 cylinders longitudinally)		
BOW DESC:	pointed, ext. framing ceilings, wale, stem post (2.5m height)		
DIMENSIONS:	: LENGTH 6.04m	BEAM 1.4m WL to top 1.1m WL to sediment	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT : STBD		18cm 5cm
FRAMES #:	63 PORT between : STBD		12cm 10cm
INT. CEILINGS:	lot of nails present : STBD	1.7m	
STANCHION:	wale : NUM		10cm 7cm
BULKHEAD:	one deckbeam : NUM		
ABANDONMENT SIGNATURE:	BURNING Desc:	MODIFICATIONS Desc:	SALVAGE DESCRIPTION Desc:
ADDITIONAL OBSERVATIONS:			
<p>cream colored paint red framing iron post on stem cap rail</p> <p>Coastline Dock B.E.V. Port Starboard B.E.V. Bow Int. ceiling ext. framing frames</p>			

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	6055 PQR		
NAME(S):	Nicole Wittig	DATE:	18 Aug 2009		
	Rob Munford	TIME:	12:30 PM		
POSITION:	- E	- DATUM			
	- N	- ORIENTED (BOW-STERN)			
SITE DESC:	DRY	SUBMERGED INUNDATED			
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS	OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN	
BOILERS:	SQUARE	CIRCULAR	NONE		
STERN DESC:					
BOW DESC:					
DIMENSIONS:	27m	: LENGTH	9m	: BEAM	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED	MOULDED
EXT. STRAKES:	: PORT	: STBD			
FRAMES #:	: PORT	: STBD		30cm	30cm
INT. CEILINGS:	: PORT	: STBD			
STANCHION:		: NUM			
BULKHEAD:		: NUM			
ABANDONMENT SIGNATURE:	BURNING	MODIFICATIONS	SALVAGE DESCRIPTION		
	Desc:	Desc:	Desc:		
ADDITIONAL OBSERVATIONS:					
<p> Aftwartship bulkhead amidships (3?) ↑ N Shore 101 Stern Rubrail / Handrail?  10cm x 10cm </p>					

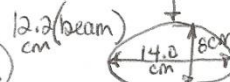
ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:		0058 PQR	
NAME(S):		Peter Campbell Lindsay Smith		DATE: 18 Aug 2009	
		TIME: 12:30 PM			
POSITION: 18S		0391664		- E I left - DATUM	
40N		4018679		- N NW - ORIENTED (BOW-STERN)	
SITE DESC:		DRY		SUBMERGED	
				INUNDATED	
<p>New vessel located during canoe survey Perpendicular to shore, riverside of two pilings with plants growing on them. Very loose sediment around vessel.</p> 					
HULL MATERIAL:		WOOD		STEEL IRON COMPOSITE OTHER:	
FASTENINGS:		TREENAILS		IRON COPPER SCREWS OTHER: w/ washer	
PROPULSION:		TOWED		SAIL ENGINE SCREW OTHER:	
ENGINE TYPE:		STEAM		GASOLINE DIESEL UNKNOWN	
BOILERS:		SQUARE		CIRCULAR NONE	
STERN DESC:		transverse 50° angled and flat			
BOW DESC:		9.13m			
DIMENSIONS:		38.53m: LENGTH		8.38m: BEAM	
				1.60m: DEPTH	
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):		LENGTH SIDED MOULDED	
EXT. STRAKES:		: PORT : STBD		.20m .09m	
FRAMES #:		Side frames 20x15 : PORT : STBD		.20m .34m	
INT. CEILINGS:		: PORT : STBD			
STANCHION:		none found : NUM			
BULKHEAD:		3 longitudinal, 1 transverse (w. long.)		40cm 13cm	
ABANDONMENT		BURNING		MODIFICATIONS	
SIGNATURE:		Desc:		Desc:	
				SALVAGE DESCRIPTION	
<p>ADDITIONAL OBSERVATIONS:</p> <p>Hold 1.93m Bulkheads: 40cm x 13cm Sided moulded</p> <p>3 Longitudinal bulkheads</p> 					

ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0057	PQR
NAME(S):	Nicole Witting	DATE:	18 Aug 2009	
	Rob Minford	TIME:	12:30 pm	
POSITION: 19S UTM	0391679	- E	±5M	- DATUM
	4018654	- N	N-S	- ORIENTED (BOW-STERN)
SITE DESC:	DRY	(SUBMERGED)	INUNDATED	
HULL MATERIAL:	WOOD	STEEL	IRON	COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER	SCREWS OTHER:
PROPULSION:	TOWED	SAIL	ENGINE	SCREW OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE	
STERN DESC:				
BOW DESC:				
DIMENSIONS:	31.3 m	: LENGTH	8.7m (outer)	: DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):		LENGTH	SIDED MOULDED
EXT. STRAKES:	: PORT	: STBD		
FRAMES #:	: PORT	: STBD	.19	.20
INT. CEILINGS:	: PORT	: STBD		
STANCHION:		: NUM		
BULKHEAD:		: NUM		
ABANDONMENT SIGNATURE:	BURNING		MODIFICATIONS	
	Desc:		Desc:	
SALVAGE DESCRIPTION		Desc:		
ADDITIONAL OBSERVATIONS: N/S orientation Shore / stern  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border-left: 1px solid black; height: 100px; margin-right: 10px;"></div> <div style="text-align: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px; display: flex; align-items: center; justify-content: center;">①</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px; display: flex; align-items: center; justify-content: center;">②</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px; display: flex; align-items: center; justify-content: center;">③</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px; display: flex; align-items: center; justify-content: center;">④</div> </div> <div style="margin-left: 10px;"> <p>* Numerous bulkheads</p> <p>* Fore - broken off ended abruptly</p> </div> </div>				

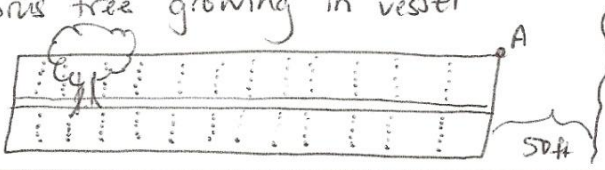
ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	
NAME(S): Lindsay Smith Peter Campbell		0058 PQR	
DATE: 18 Aug 2009		TIME: 3:00 PM	
POSITION: 18S 111W	0391691 4018635	- E 77°	- DATUM
		- N 260° W	- ORIENTED (BOW-STERN)
SITE DESC:	DRY	(SUBMERGED)	INUNDATED
Far out from shore on the West bank of the River above the Knobs Creek entrance Barge with decking creating submerged hazard.			
HULL MATERIAL:	WOOD	STEEL	IRON COMPOSITE OTHER:
FASTENINGS:	TREENAILS	IRON	COPPER SCREWS OTHER:
PROPULSION:	TOWED	SAIL	ENGINE SCREW OTHER:
ENGINE TYPE:	STEAM	GASOLINE	DIESEL UNKNOWN
BOILERS:	SQUARE	CIRCULAR	NONE
STERN DESC:	Shore side end: mostly fallen down - remaining frames angled, square		
BOW DESC:	River side end: mostly fallen down - remaining frames angled, square		
DIMENSIONS:	33.60 m : LENGTH	10.27 m : BEAM	1.68 m : DEPTH
CONSTRUCTION ELEMENTS:	AVERAGE SCANTLING (M):	LENGTH	SIDED MOULDED
EXT. STRAKES:	possibly : PORT : STBD	32 cm	4 cm
FRAMES #:	: PORT : STBD		
INT. CEILINGS:	: PORT : STBD		
STANCHION:	: NUM		
BULKHEAD:	3 longitudinal (2 were measured)	NUM	3.13 m between them from int. ceiling planks
ABANDONMENT SIGNATURE:	BURNING Desc: none found	MODIFICATIONS Desc: NONE	SALVAGE DESCRIPTION Desc: - iron bitt still in place denotes no salvage. - iron sheeting in situ as well 11cm height sacrificial
ADDITIONAL OBSERVATIONS:			
Deckbeams 25cm square, cambered with the deck ↳ half-lap joints			
Decking 11cm x 5cm sided molded			
frames DB vertical frame ext. strakes.			
frames DB clamp frames			
Shoreside Bitt: 75cm (length) 20cm (height)			

* possible iron knee at a deckbeam.

* 2 stringers under deck 15cm x 11cm (inbetween) molded sided (bulkheads)



ELIZABETH CITY SHIPS' GRAVEYARD		VESSEL NUM:	0059 PQR		
NAME(S):	Nicole Wittig	DATE:	18 Aug 2009		
	Rob Munford	TIME:			
POSITION: 18S	0391766	- E	7644 - DATUM		
	4018602	- N	- ORIENTED (BOW-STERN)		
SITE DESC:	DRY <u>SUBMERGED</u> INUNDATED				
HULL MATERIAL:	<u>WOOD</u>	STEEL	IRON	COMPOSITE	OTHER:
FASTENINGS:	TREENAILS	<u>IRON</u>	COPPER	SCREWS	OTHER:
PROPULSION:	<u>TOWED</u>	SAIL	ENGINE	SCREW	OTHER:
ENGINE TYPE:	STEAM		GASOLINE	DIESEL	UNKNOWN
BOILERS:	SQUARE		CIRCULAR	<u>NONE</u>	
STERN DESC:	flat transomed				
BOW DESC:	pointed, sloped with iron (see below)				
DIMENSIONS:	38.3 m : LENGTH		8.2 m : BEAM		: DEPTH
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):		LENGTH	SIDED
EXT. STRAKES:	: PORT		: STBD		
FRAMES #:	: PORT		: STBD		
INT. CEILINGS:	: PORT		: STBD		
STANCHION:	: NUM				
BULKHEAD:	: NUM				
ABANDONMENT	BURNING		MODIFICATIONS		SALVAGE DESCRIPTION
	Desc:		Desc:		Desc:
SIGNATURE:					
ADDITIONAL OBSERVATIONS:					

ELIZABETH CITY SHIPS' GRAVEYARD			VESSEL NUM:		0062 PQR		
NAME(S):		Joseph Lengicza Whitney Petrey		DATE:		22 March 2009	
POSITION: UTM		18S 0391949		TIME:		All Day 10:30-5:00	
WGS 84		4018822		WGS 84		- DATUM	
SITE DESC:		DRY SUBMERGED		INUNDATED			
<p>Downstream of Sewage Plant within lumber enclosure on the W bank of the river. Cypress tree growing in vessel</p> <p>Twelve rows of square posts. Made in 2 sections? machined lumber</p> 							
HULL MATERIAL:		WOOD		STEEL		IRON COMPOSITE OTHER:	
FASTENINGS:		TREENAILS		IRON		COPPER SCREWS OTHER:	
PROPULSION:		TOWED		SAIL		ENGINE SCREW OTHER:	
ENGINE TYPE:		STEAM		GASOLINE		DIESEL UNKNOWN	
BOILERS:		SQUARE		CIRCULAR		NONE	
STERN DESC:		Raked					
BOW DESC:		Raked					
DIMENSIONS:		68.8 ft : LENGTH		23.8 ft : BEAM		3.5-4 ft : DEPTH	
CONSTRUCTION ELEMENTS:		AVERAGE SCANTLING (M):		LENGTH		SIDED MOULDED	
EXT. STRAKES:		: PORT		: STBD		2" varies	
FRAMES #:		: PORT		: STBD			
INT. CEILINGS:		: PORT		: STBD			
STANCHION:		12 (each w/ 8 vertical timbers): NUM					
BULKHEAD:		: NUM					
ABANDONMENT SIGNATURE:		BURNING Desc:		MODIFICATIONS Desc:		SALVAGE DESCRIPTION Desc:	
<p>ADDITIONAL OBSERVATIONS:</p> <p>Non-marine construction Upside down in water. Profile</p> <p>Possibly two unique structures connected together</p> <p>Unidentified Barge / possibly a floating dock</p> <p>Baseline offset recording method.</p> 